PAPERS ON THE

METHODOLOGY OF RESEARCH IN SOCIAL SCIENCES

Dr. V. Shanmugāśundaram

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UNIVERSITY OF MADRAS

PAPERS ON THE

METHODOLOGY OF RESEARCH IN SOCIAL SCIENCES

BY

Dr. V. SHANMUGASUNDARAM

THIS IS A COLLECTION of papers written over a decade and reprinted in their original form. The choice of the research subject is often a matter of anxiety for the student and sometimes unexpressed annoyance to the supervisor as well. In countries where the traditional system of education obtains, independent thought is particularly at a discount. That makes it all the more an impediment for the young research worker. This is the beginning of the problem. As the researcher proceeds with his work, the methodological issues, the collection of materials, the manner of presentation of the matter and the drafting of the research reports give anxious moments. Research is perhaps the most individualistic of endeavours and yet those who have been in their research strides, are in a position to warn the new-comer of the pitfalls and perhaps show the road-signs to the oasis of originality and fundamental discovery.

The papers in this volume touch upon issues of relevance to researchers in economic sciences in particular and many of the observations and findings are of common interest to all the branches of social sciences.

PAPERS ON THE

METHODOLOGY OF RESEARCH IN SOCIAL SCIENCES

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IN SOCIAL SCIENCES

ACKNOWLEDGEMENT

In presenting these papers the author deems it his duty to acknowledge his indebtedness to the authorities of the University of Madras and especially to the Vice-Chancellor, Lt. Col. Dr. Sir A. Lakshmanaswami Mudaliar, under whose inspiring leadership a Unit for the Methodology of Research in Social Sciences has been organised. The author is thankful to the University for the opportunities to pursue studies in research methodology and for permitting him to publish these papers.

He has had the privilege of guidance by Professor R. Balakrishna, the Director of the Social Sciences Methodology Unit. In many seminars in the Indian and other neighbouring Far-Eastern Universities, between 1948 and 1961, the author has met participants to whom he should express his thanks. He must make particular mention of the weekly seminars, conducted at the University of Madras during the period of 1958 to 1961 which have provided the intellectual stimulus to undertake the work of this nature. The high level of reasoning and objectivity that characterised the seminars, to a large measure should be attributed to the lead given by Professor R. Balakrishna at every one of those seminars.

Professors J. B. Hughes and M. H. Gopal have been good enough to discuss with the author a few methodological issues and he is grateful to them.

Besides those who took active part in the discussions, the author recollects with a sense of indebtedness the numerous bright faces and sparkling eyes which without the need for words indicated their criticism, approval and/or modification of ideas that arose in the discussions at the several seminars on methodology and current economic development.

PREFACE

The papers of this volume are addressed primarily to social scientists and to academicians. Among them there are the economists who lay claim to a higher level of scientific analysis than that claimed by historians, political scientists and sociologists. Notwithstanding the levels of scientific abstraction that obtain in the development of the social sciences, the common ground of all enquiries in these spheres pertains to the needs and ideals of the *homo sapiens*. The purpose of research in social science is conditioned by the purpose of the life of human beings as individuals, groups or as one totality of mankind. In the early centres of learning either in Rome or Greece or in Oriental countries the importance that was given to the study of humanities was of a high order and befitting the trust in them those centres of learning gave to humanity fundamental ideas of ethics, metaphysics and philosophy.

In the subsequent centuries and more particularly in the eighteenth and nineteenth centuries the importance attached to physical sciences out-shadowed that with which the human sciences were treated. Consequently during the last two centuries the gap between the levels of fundamental thinking in physical sciences and human sciences has widened. Of the social sciences, economics, stands apart in one respect. It cannot be said that there is public apathy towards the culti-

vation of the subject. On the contrary notwithstanding the slender economic theories—often obsolete—on which economists have to offer prescriptions, the faith of the policy makers in the competency and usefulness of the economists has been of a high order.

The rapidity with which changes are taking place in economic conditions and practices cannot but be attributed to the application of the one or the other school of economic or social thought to current problems. An issue that is of great concern to social scientists is that they are painfully aware of the irrelevance or the inadequacy of many theories of economics and allied social sciences to contemporary problems. Many of the theories on which they are fed have outlived their purpose and the perseverance or temperament or training required to formulate relevant theories of economic and social development has not been adequately forthcoming among social scientists.

Of the many diagnostic results the one that can make a claim on our attention is that there is a lack of methodological approach to the study of the many branches of social sciences. In the papers that follow an attempt has been made to spotlight attention on the areas of enquiry and methods that may be adopted. The first of the papers discusses the purpose of social research in contrast to research in pure sciences. The features of criteria both subjective and objective are considered. The application of the methods of research and an appraisal of its nature in contemporary economic research practices in historical and labour economics constitute the subject matter of the second and third

papers. The notion of a few economists that history is a feather bed meant for those who are unfitted by temperament or training for economic theory, econometrics, economic statistics or other more rigorous forms of economic scholarship is disproved in the second paper. The labour economists have often viewed their subject from the angle of emergencies. In the paper on this subject the methods of appraisal of the social and macro economic impact of labour movements are indicated. The fourth paper discusses the features of a research finding which is distinct from a technical report.

The importance of vested interests appears to be exaggerated in modern economic theory. This is a theoretical finding of an earlier century that had gone unchallenged mainly because of the prominence of applied economics and the neglect of its counterpart theoretical economics. Similarly in other social sciences there is a tendency to ignore theoretical research because of feverish haste and the desire to seek quick results which characterise modern social life in contrast to the dedicated and essentially cautious attitude of earlier societies. The seemingly unrewarding pursuit of theoretical research paves the way for abundant application. Any neglect of the former has as its concomittant the impoverishment of applied studies. In the fifth paper there is a critique of the place of theory in economic research. In all these papers the approach has been not to tediously inform the readers, but rather to excite the fervour for fundamental and theoretical research.

University of Madras,
Madras, 14th April 1962

V. SHANMUGASUNDARAM

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PREFACE TO THE SECOND REPRINT

This book is reprinted without any modification whatsoever in the original text in deference to the wishes of a number of professional colleagues in India and abroad. The papers in this book were written between 1958 and 1962 and even if the suggestions of my affectionate and well meaning friends had been different I would have found it well nigh a purposeless task to reinterpret the ideas that evolved in my mind since 1962, in the light of my experience in the profession of economists and my familiarity with men and institutions over a wide range of Indian economic scene.

Suffice it therefore to state here only a few suggestions, in the same logic of thought in which the book was cast a decade back. I have referred to C. Rajagopalachari as a contemporary publicist. He lived long enough to reach 95 years but as this reprint goes to the Press he is already no more for about a year. Yet another contemporary social reformer—Periyar E. V. Ramaswami[1]—a close friend of Rajaji has been active in organising a mass movement and social revolt upto the last days of his life notwithstanding his age of 95 years. The world has now acclaimed him — rather belatedly after he has passed away — that he is a great social reformer of the twentieth cen-

PERIYAR RAMASWAMI, Erode Venkata (*b.* 17 September 1879—*d.* 24 December 1973).

A great social reformer and the crusader for social equality, born in Erode, Tamil Nadu; His schooling was limited to primary education; Entered business in 1911; Joined the Non-cooperation Movement launched by Mahatma Gandhi in 1920, and courted arrest for his participation in the historic Vaikkom Satyagraha against untouchability; President of Tamil

tury. Long ago one of his contemporaries Sir A. Ramaswamy Mudaliar acclaimed him as a modern Rousseau.[2] And if there had been anything obvious to every in-

Nadu Congress Committee in 1924; left it in 1925 disgusted with the discriminative caste practices. Associated with the Justice Party in 1926; In 1944, founded the Dravida Kazhagam "to abolish caste system and the Brahmin superiority" (*Times of India, Bombay*—25-12-1973). Opposed the compulsory Hindi education scheme of Dr. C. Rajagopalachari (*loc. cit.*) and courted arrest in 1937 and in 1948. Brought about a tremendous change among the Tamilians during his life-time; Was an iconoclast, a revolutionist,, an agnostic and a revolutionary thinker. Tried to free the people from many superstitious beliefs and practices. Published "*Viduthalai*" and "*Unmai*" (TRUTH) in Tamil and the "*Rationalist*" in English. He also established the training schools for Secondary and Primary teachers, and an orphanage in Tiruchi. He passed away at the age of 95; he held a Caste Abolition Conference and fixed 26 January 1974 as the date by which the Indian Constitution should be amended to ensure social equality (*i.e.*) to enable 'untouchables' to become priests. Prime Minister *Mrs. Gandhi* described him as "a colourful personality who revelled in controversy and challenged many accepted notions". The Tamil Nadu Government, of which *Dr. M. Karunanidhi* who started his journalistic career in an editorial, office of Periyar, is the Chief Minister, hailed Periyar as one of India's "foremost social reformer", and published a Gazette Extraordinary (Fort St. George, Madras, 25 December 1973) in his memory. *Thiru K. Kamaraj* said the death of Periyar was "a great loss to public life". The Governor of Tamil Nadu, K. K. Shah called Periyar "an ardent social reformer" *Jayaprakash Narayan* said that Periyar's death "had removed from the Indian scene a heroic, patriarchal figure who battled all his life.... His contribution to instilling a sense of dignity in the downtrodden and downgraded sections of the Hindu society would remain an imperishable monument to his life and work".

2. When the Justice Party faced a severe political crisis the Editor of "Justice" and an eloquent exponent of its ideology, Sir A. Ramaswamy Mudaliar, said that his Party men should thereafter follow the lead of Periyar E. V. Ramaswamy, whom he acclaimed as "the Modern Rousseau" of the twentieth century. cf. *Murasoli*, Tamil Daily, Madras, dated 25 December 1973, pp. 4, Col. 4.

ternational observer[3] but not so clear to Indian economists, it was that social reform and social change are preconditions for economic development. Under the auspices of the State Planning Commission, when I had the privilege and professional satisfaction of preparing a report[4] on Social Change for Economic Development, a close follower of Periyar, Mr. K. Veeramani, was good enough to be a member of the team, and give it a touch uniquely that of his master. Yet, I am only too deeply conscious of and familiar with the calculated indifference of many planners (including those who claim some international experience) to social change and social reform. To what extent the Constitution of India has been followed in spirit in respect of social equality and social justice is a matter of great importance in planning by the Union Planning Commission and State Planning Commissions.

Political economy is another neglected area. Economic policy studies[5] have gained in importance but they still remain as documents specially written for the use of Government (which is willing to have

3. McNamara, Robert S.: *Two Billion People and One Hundred Countries* (New York, 1972). See also Pearson Report submitted to Mr. McNamara who as President of the International Bank for Reconstruction and Development, is a staunch advocate for the rich nations giving increasing capital aid to poor nations, rightly believes that physical capital or commodity aid would serve poverty removal only if human resources and social attitudes are improved in the recipient countries.

4. State Planning Commission: Report of the Task Force on Human Resources and Social Change for Economic Development, Government of Tamil Nadu, Madras, 1973.

5. Some of the good models of economic policy studies are so dissimilar, and numerous that it is difficult to give sufficient illustrations of methodological frames. *Economic Policy—Principles and Design* by Jan Tinbergen, Professor of Development Planning, (Netherlands School of Economics);

its conclusions predetermined), or as is often the real situation, reports meant to be filed by bureaucrats so that they are not really read by anyone. I am sure there is no impartiality in that they too may not read it before filing[6] In the Indian landscape, policy statements are abundant. Every address by the leaders of political, social and other organisations are replete with new ideas and policies for either substantial or superficial changes in economic policy. These suggestions are often indirect and are to be understood by implications. Sometimes they are quite direct like the ad nauseum statements on Land Reforms (without any serious thought for action), surely without any related ideas of linkages to goals of good production or social reform to emancipate the agricultural serfs. Policy makers do have consistent economic patterns to follow. This certainly is part of the reason, and the relevant part for economists to ponder over. The Nehru era of Indian political and economic policy was quickly followed by Mrs. Indira Gandhi's regime, I was in Britain when Nehru passed away, and it amazed me that those in Universities and the learned Press in that country were not free from ignorance of the reality of the long background of the democratic process in India. Dating back to 1885 when Allen Octavian Hume founded the Indian National Congress to days when K. Kamaraj was President of that organisa-

Economic Policy by K. E. Boulding (London, 1959); and D. R. Gadgil's Paper on *Development and Planning in India* are some of the well known works on the subject. Even to understand these books, one requires able guidance of the economist who know the intellectual background of the authors and the economic context and ideology which spurred them to write. J. K. Galbraith's *Affluent Society* is illustrative of the preparatory effort to clear the ground for a new economic policy.

6. As exceptions there are a few Bureaucrats—who cast in the mould of Vincent Smith, the great historian of India—still keep the fire of their youth and intellectual keeness of their scholastic days.

tion (1963-68), there was a well known process of electing leaders, and when the country became a Republic, the practice of the leader of the Parliamentary Party becoming the Prime Minister was established. The process of consensus was ensured and we have good studies of this political succession like for example by Michael Brecher. It would be interesting to have an account of the economic bases of these successions particularly in the light of the frequent economic policy debates in the last two decades.

The scholars abroad have no esoteric powers to understand India. Their understanding or correction of their misunderstanding (this is often directly proportional to their bias, one way or other) is not possible if Indian social scientists do not apply logic and scientific methods to the study of contemporary issues.

These two Prime Ministers have influenced many aspects of the recent economic philosophy. Two major alternatives, both at the regional level, were well-known and have been sought to be implemented by democratic process. One school consists of persons and institutions led by E.M.S. Nambudripad and others of the Communist school of thought who formed and led the Government of Kerala for sometime. Another is the movement of Dravida Munnetra Kazhagam (DMK) led by Arignar Dr. C. N. Annadurai who headed the Government of Madras (renamed Tamil Nadu). which is now led by Dr. Kalaignar M. Karunanidhi, President of the D.M.K. and Dr. Navalar Nedunchezhian, General Secretary, of the D.M.K. There was also in the Punjab and in Orissa a few opportunities for choices in economics and social policy. These are facts or major landmarks in Indian Economic and Political life. Whether any individual economist or social scientist or publicist

likes them or not, is a different matter. "Comment is free but facts are sacred".[7]

It is impossible to work on the theory of economic policy[8] since Independence without reference to the work of the important Finance and economic Ministers of India. Each in his own way had a distinct personality whether it was Sir R. K. Shanmukam Chetty in respect of sterling balances, or C. D. Deshmukh in shaping the relations between the Finance Ministry and the Union Planning Commission, or John Mathai in the context of prudence in Public Expenditure, or T. T. Krishnamachari in initiating steps for the formation of the Industrial Development Bank of India and for the involvement of Indians in high levels of economic administration in both private and public sectors, or Morarji Desai in toying with the ideas, however unpopular, like Gold Control, or Mrs. Indira Gandhi and Y. B. Chavan in grappling with lightning speed the consequences of Nationalisation of Banks, we find great events have taken place at the hands of Indian Finance Ministers and the State Governments as well who consciously or otherwise have been the makers of economic life of more than 100 million households in India. The economic power and authority of the Union and State

7. This is a famous statement which was made by Charles Prestwich Scott (1846–1932) in the *Manchester Guardian* 6 May 1926. This quotation is from a larger text:—

> " The newspaper is of necessity something of a monopoly and its " first duty is to shun the temptations of monopoly. Its primary office is the gathering of news. At the peril of its soul it must see that the supply is not tainted. Neither in what it gives, nor in what it does not give, nor in the mode of presentation, must be the unbounded face of truth suffer wrong. Comment is free but facts are sacred."

8. SHANMUGASUNDARAM, V.: *Towards a Revision of Indian Economic Policy* (*Vide Swarajya* Republic Day Number, 1974).

Governments in making the economic form and quality of households, firms and other institutions should be studied in the light of the economic theory, philosophy and ideology which influenced them. The parliamentary papers and proceedings of different legislatures are yet to be put to sufficient use by researchers in India, and it is time that they are put to scholarly analysis. In a poor country the investment in higher education cannot be very large. The highest priority is naturally for primary education and removal of adult illiteracy. Hence a resource-induced monopoly of the elites of the higher educational orbit is sometimes consciously and often unconsciously formed, and it can cause all the abuses of social monopolies.[9] If posterity is to judge the role played by these circumstantial educational monopolies, it would be both in terms of what they did and the methodology they followed in the collection of facts of contemporary men and events. The creation of schools like the London School of Economics and Political Science with a cluster of dedicated scholars could be the critical effort to match this great and urgent task. The school creation is not a mere matter of finance. What

[9]SHAW, BERNARD: The Complete Bernard Shaw Prefaces, *Parents and Children* (Misalliance, 1910), p. 59 (Paul Hamlyn, London, 1965) Shaw wrote:

"Here, again, so at so many points, we come up against the abuse of schools to keep people in ignorance and error, so that they may be incapable of successful revolt against their industrial slavery. The most important simple fundamental economic truth to impress on a child in complicated civilisations like ours is the truth that whoever consumes goods or services without producing by personal effort the equivalent of what he or she consumes, inflicts on the community precisely the same injury that a thief produces and would in any honest State, be treated as a thief, however full his or her pockets might be of money made by other people".

Beatrice and Sidney Webb[10] did was not for a handful of silver; more than brick and mortar, what is difficult to form is human resources and rare collection of books and study materials. No individual surgeon, however eminent could make a hospital for healing without devoted staff, and sophisticated tools and equipment. Nor can one solitary economist become an apostle of the poverty removal or a school of Economic Sciences as a tangible powerhouse of intellectual effort.

14th January 1974
PONGAL DAY
University of Madras

V. SHANMUGASUNDARAM

10. BEVERIDGE, JANET : *An Epic of Clare Market: The Birth and Early Years of the London School of Economics.* (G. Bell & Sons, London, 1960).

PAPERS ON THE
METHODOLOGY OF RESEARCH
IN
SOCIAL SCIENCES

FACTORS INFLUENCING THE CHOICE OF A RESEARCH PROBLEM

1.1. *The Nature of Criteria*: This paper considers the criteria applicable to Human Sciences,[1] and particularly to Economics. The subject matter is covered under certain broad divisions and sub-divisions with a view to render the scope, the contents and the presentation of the criteria amenable to elaboration, addition and evaluation. Human selection implies purposiveness, deliberateness and rationality. Beyond these, the criteria for the selection of a research problem, cannot be laid down in as clear terms, as is done in pure sciences. The only criterion of "Natural Selection", as the term is understood in biology, is the elimination of the weak and multiplication of the strong in given environment. And in botany, the main criterion of "artificial selection" is the best possible grafting of two or more species to produce a new species with desired characteristics. In human sciences the norms are numerous, alternative and/or competitive. The dominating norm of human action may be protection or competition, conservatism or modernness. A given human norm governs the selection of a research problem and also limits its purposiveness, deliberateness and rationality.

1. Hicks, J. R.: *Social Framework*, (Oxford University Press, Oxford, 1952, second edition), Chap. I.

1.11. The value judgements of a society change from generation to generation depending upon the most significant of social objectives. The question what scientific significance is this finding? or what practical utility is there in the finding? is often asked. A broad value problem of concern to all science is posed by the spectacular destructiveness caused by some of the applications of modern science. The issues that arise are those of interaction, of involvement and of interpretation, which relate to the procedures pertaining to the investigation of a given problem. The selection of a problem thus leads the researcher to the next stage, that of selecting the central theme of the problem for specific inquiry.

2.0. The Features of Human Criteria

2.1. *Purposiveness*: The purpose of research is to enquire into human resources and objectives. It may be to know what the resources are, or what modifications and alterations would take place. It may also be to look into the future on the basis of experience or to devise the best way of attaining a given goal. These purposes are respectively: (1) static assessment, (2) dynamic assessment, (3) prediction, and (4) formulation of solution to a problem. The distinction between the purposes, as theoretical and practical, is accurate in pure sciences. In humanities, instead of a separation, the blending of these features is noticeable. Further, every research worker in this field should not be deluded by the desire to obtain universal propositions. He should only specify the goal that he is seeking. It consists in "making explicit the value premises behind

the selection of a research problem". The use of value premises increases the objectivity. A clear statement of the value judgements that have been taken for granted is necessary.[2] It enables the readers of the report to reinterpret it under conditions of different value judgements. At certain levels of research the main purpose appears to be the training of the graduates in the methodology of research. Candidates who work with their immediate objective as the fulfilment of the terms of research awards, fellowships, or grants, may not be fully aware of the purposiveness of research. In such cases, the University or Institution which makes available the facilities, takes good care of the purposiveness of the problems, which are considered suitable for theses.

2.2. *Deliberateness*: Deliberateness of discovery and invention may be questioned by those who consider some of the valuable achievements of the human mind as the products of accidents. In sciences, one finds the most painstaking, devoted and single-minded worker "straying into" or stumbling on truth. Yet, the principle of Archemedes cannot be attributed only to chance, because, before Archemedes, men of lesser mettle had not perceived that a body immersed in a fluid weighs less than it does in vacuo by the weight of the fluid it displaces. His mind was deliberately active to see natural phenomena, especially, the physical behaviour of water. Elsewhere in this paper, references are given to Malthusian Principle of Popu-

2. ROSE, ARNOLD, M.: *Theory and Method in the Social Sciences*, (University of Minnesota Press, Minneapolis, 1954), p. 163.

lation and Keynes' "General Theory", which bear out that only the trained mind, which is quite deliberate in its intentions, can perceive the "off-shoots" of truth, that is being pursued.

2.3. *Rationality*: The distinguishing feature of the human mind is rationality. After weighing the merits and demerits of a subject of enquiry, from several viewpoints—that of the research worker, the objective characteristics of the problem and of research environment—a subject is selected. The criteria from these points of view are considered in the following sections of the paper. A fundamental issue in this respect may be raised here. Rationality is a concept based on assumptions. In Economics rationality implies, utilization of scarce means, with a view to maximize human welfare. The psychological and moral values inform recent developments in economic theory, and welfare has thus become the goal of economic activity. There are certain intangibles, which the assumptions, of the "Economic Man" cannot sustain. In studies of Economic Growth,[3] the influence of institutions, beliefs, culture and matrix of customs which are intangibles from the pure economic standpoint are counted as factors, which bring out economic growth consistent with welfare. In the methodology of research a similar assumption has to be laid down so as to be followed in the initial stages, and to be suitably modified later. There are two facets to this assumption.

3. BALAKRISHNA, R.: *Process of Economic Growth,* (Madras University Journal, Section A, Centenary Volume, 1957). See also *Studies in Indian Economic Problems* (Bangalore Press, Bangalore, 1958), pp. 6-8.

Firstly, rationality implies the attainment of the highest standard of performance in research; the choice of the problem, the research worker who is to take the problem and the environment should be considered in an interrelated framework. Secondly, after the initial training in research is over, the criterion is the attainment of the highest standard of performance consistent with psychic satisfaction. Besides this main criterion, the following account covers some of the minor criteria.

2.4. *The Ethical Basis of Purposiveness, Deliberateness and Rationality*: Ethics governs the code of conduct. Knowing and not knowing are the types of conduct. The highest scientific ethics is that under a given condition of social heritage one ought to contribute to the stock of knowledge instead of merely being content with knowing what has been accumulated. The ethics of this action is the recognition of the duties of the inheritors of knowledge to those who bequeathed knowledge. When a given piece of knowledge contradicts the accepted norms of society it often occurs that the new precept is taken for non-ethical or purely rationalistic approach. Ethics, is in fact, crystalised rationality. A scientist takes cognisance of all the possible logical, speculative, empirical and experimental processes of analysing knowledge. Often his task is burdened with the problems of applying more than one technique. Multiple techniques to one issue have the advantage of analysing and reinterpreting a situation from numerous angles. The results of one technique act as a check or cross check on the results of another technique. Broadly, whatever be the technique employed in human sciences they ought to embody one

or more of the three features, purposiveness, deliberateness and rationality.

3.0 Criteria for the Identification of Problems

3.1. *The Nature of Identification:* The selection of a research subject is difficult to the uninitiated. He may think that nearly all truth has already been discovered. Each teacher in the institutions of higher learning is keenly aware of numerous opportunities for further research. In social sciences most of the problems are not settled for all time. Variables like population, ways of living, articles of consumption and production, administrative operation, social mores, the will to economise and other features give rise to a host of problems awaiting continuous study and solution. Earlier findings have to be brought up to date or studied separately in the light of changed conditions.

3.2. *Utilisation of the Course of Study and Scholastic Contacts:* The beginners in research are unable to identify problems that are clearly discernible to experienced investigators and theses advisers, because of their problem blindness. An organised effort on their part is necessary to overcome their problem blindness.

The course of study at graduate or post-graduate level is quite suggestive of problems for further investigation. The influences of the Professor on his students or of the senior scholars on younger workers is valuable, like that of Comte on Herbert Spencer, James Mill on John Stuart Mill or J. N. Keynes on J. M. Keynes. A few critical papers prepared for seminars or for publi-

cation in learned journals have frequently been the precursors of theses. Apart from spontaneous gains during one's association with men of learning, one should seek to utilize the graduate programme to the utmost, so that further studies could be undertaken.

3.3. *Organisation of the Programme of Reading*: An organised programme of reading extensively and intensively, helps one to identify a research problem. Reading should cover a wide range of related subjects and also should reach the depths of a few selected regions. In the field of research no one can lay claim to solitary splendour. The work of predecessors and co-workers contributes to success. Yet, some like Descartes had little respect for tradition or the classics. In the later years of his life Comte practised, "Cerebral Hygiene", a custom of refraining from reading the books of other social thinkers. J. M. Keynes spoke mockingly of administrators, who were "distilling the frenzy from some academic scribbler of a few years back" (General Theory, p. 383). Those great men were taller than their predecessors because they stood, knowingly or unknowingly, on the shoulders of the men of the past. Could Keynes deny that he was gathering the quintessence of the theory of under-consumption from the writings of Malthus? Hegel and Marx believed in the continuity of historical process.

3.4. *Limitation of the Scope of the Problem*: After one had undergone the graduate course of study and an organised programme of reading, a broad area of research would be discernible. The subject should be reasonably limited in scope and yet large enough

to provide a meaningful conceptual pattern. The divisions, sub-divisions, and related areas of investigation should be sized up so as to finalise the scope of enquiry, subject to variations arising out of the exigencies of research. The needs of the new position in one's career may require modifications both in scope and character of the problem.

3.5. *Perception of the Off-shoots of Research:* When an investigation is in progress, a discovery, which is an off-shoot may turn out to be of great significance. In physical sciences, such discoveries have been remarkable. Pasteur, unexpectedly developed the principle of immunization, when he found that the two chickens that had recently recovered from a disease, were not affected by the microbes. It was not his intention to subject the two chickens to a test. X-rays were discovered in a similar situation. The applicability of these illustrations to behavioural sciences may be questioned. If we find "nature easy to follow and difficult to drive" it is true in a great measure that human actions are difficult to follow and very difficult to drive. A few economists have given us principles and theories which were not perhaps, organisedly and deliberately sought out by them. Thomas Malthus was primarily interested in the study of poverty of the slum dwellers of the early phase of the English Industrial Revolution. The "Essay on Population" (1798-1802) was the off-shoot of his enquiries. John Maynard Keynes, encouraged by the "Prophesy" in his "The Economic Consequences of the Peace" (1919) which came true, set out to draw an outline of "General Theory",

4.0. Criteria from the Standpoint of a Research Worker (Subjective)

Criteria from the view point of the research worker are governed by several factors, the important among them being his interest in research, training and personal abilities, his capacity to face hazards, penalties and handicaps,—time at the disposal of the research worker, his director, collaborator and staff, and his station in life.

4.1. *Interest in Research*: Interest in intellectual curiosity is developed out of certain inherent qualities of man. Stimulation of interest can have but partial success. And reward has not always been the only incentive to work. At the University of Pisa, Galileo developed his interest in mathematics and soon gave up pre-medical studies; although poor he evidently was not interested in monetary rewards. In those days, a Professor of Medicine received the equivalent of Rs. 9,000 a year and a Professor of Mathematics only about Rs. 300.[4] The scientists and scholars in their desire to construct a completely coherent system of ideas, go to extremes of concentration, sometimes withdraw from human contacts and tend to be reluctant to publish anything short of perfect elucidations of their findings. Immanuel Kant devoted his entire life to such a pursuit. At Konningsberg he was born, lived, taught, having never travelled, or married and did nothing but think, and build a school of ethical

4. Good, Carter, V. and Scates, Douglas, E.: *Methods of Research* (Appleton—Century—Crofts, Inc., New York, 1954), p. 56.

thought. Sir C. V. Raman, is both an example and an exemplar. His achievement in Physics when he was young won universal recognition. For several decades thereafter he had kept aloof from administrative assignments and devoted his entire time to pure and fundamental research. His entry into the world of research is as purposive as his tenacity in devoting his lifetime to promote the knowledge of Physical Science.

4.2. *Training and Personal Abilities*: Training and personal qualifications have to be noted in selecting a problem for research. Many social scientists have had training in a number of related subjects, in their early days. J. S. Mill, the political economist, was also a philosopher and logician by training. Pareto was a mathematician, besides his scholarship in economics. A wide range of knowledge is desirable. But not all able scientists have made a good showing in meeting formal examination requirements. Albert Einstein failed at the entrance examinations to the Polytechnic School. His failure was an accidental feature of his intellectual abilities; his mind gave to the world the abstruse theory of relativity. The worker's physical resources, desire for outdoor work, capacity to form fellowships in research, are also guiding factors in the choice of a subject. Sidney and Beatrice Webb[5] formed

5. WEBB, BEATRICE : (*Diaries M.L. Code*), *Diaries*, 1923-1924, (Longmans, Green & Co., London, 1952). Deserving special mention are some of their joint books, *English Local Government,* (Five Vols.), (1906). *Soviet Communism,* (Two Vols.), (1935) and *History of Trade Unionism* (1920), *Our Partnership* (1948).

an ideal couple wedded to carry on research in Trade Unionism, Poor Relief and Local Government. Their life is an illustration of life-long team work in economic research—which was in no small measure responsible for the establishment of the London School of Economics and Political Science.

4.21. *Modern University Curriculum is Broad Based:* Several years of university studies after school education provide the student a scope to get introduced to a few related disciplines. But either the level of achievement in each subject is low or the range of subjects taught is extensive. In either context there is a lowering of the ability of a modern student to lay claim to the mastering of the known branches of knowledge. The merit of a diversified study is that it widens the vision of the candidates and thereby throws open, the possibilities of developing new borderline thesis as a result of interaction of disciplines. Besides the training of the individual, the personal abilities of human scientists are of preponderant value. The pure scientist in the laboratory has inanimate things like the burner or the brass rod or another metallic instrument whose behaviour is the same whether it is handled by x, y, or z namely the several scientific investigators. On the contrary the material the human scientist handles is composed of types of fellow human beings whose actions and reactions are conditioned by the capacity of the researcher to evoke proper responses. The approach of numerous social scientists in respect of the training of the social investigators is fraught with hazards in imparting adequate training.

4.3. *Capacity to Face Hazards, Penalties, etc.:* Capacity to face hazards, penalties and handicaps should be assessed before venturing to put through a research project. Pressure groups and institutional taboos would handicap research in sociology and to a lesser extent in economics. "Opposition frequently is voiced against reporting the results that run counter to the beliefs or programmes of certain economic, social, patriotic or religious groups."[6]

4.4. *Availability of Time*: Time at the disposal of the research worker depends on the part-time or full-time character of studies, the minimum and maximum requirements of the period of research under supervision as part fulfilment of the conditions for the award of degrees and fellowships. The brief for full-time and undisturbed pursuit of research is well made out by W.I.B. Beveridge in his strong protest against part-time research: "The element of time is essential. The investigator may be made to dwell in a garret, he may be forced to live on crusts and wear threadbare clothes, he may be deprived of social recognition, but if he has time, he can steadfastly devote himself to research. Take away his free time, and he is utterly destroyed as a contributor to knowledge."[7]

4.41. Organised research at Universities is of several time-dimensions. The aspirants to higher learning

6. GOOD, CARTER, V. & SCATES, DOUGLAS, E.: *Op. cit.*, p. 69. Quoted from BEALE, H. K.: *Are American Teachers Free*, (Charles Scribner's Sons, New York, 1936).

7. Also *Ibid.* BEVERIDGE, W. I. B.: *The Art of Scientific Investigation* (W. W. Norton & Co., New York 1950), pp. 33-34.

are initiated into the methodology of research at the preliminary stages. The time taken by them is determined in terms of the capacity to observe the methods of research. The product itself, namely the conclusions of the thesis is not as significant as the training to conduct research. One or two particles of new findings, the restricted rays of light that they throw on a problem cannot be considered as products which testify to the time consumed by them. A young researcher's work in social science is no better than the gymnastic feats of children. They are meant more for indicating the potentialities of the child than for proving the possibilities of man's measurable achievements. In sharp contrast are the findings of the physical scientists, who are not deterred from effecting epoch making additions to knowledge. The young mathematical prodigies or the young Newtons are not unknown to history. But the young preceptor of a social science is hindered by the inadequacies of his experience and the men around him before he can make a fundamental contribution to human science. The length of a social researcher's association with a problem allows him to mellow and view appropriate patterns of thought to ennoble social life. A longer period of training in social research than in the area of research in pure sciences appears to be justifiable.

4.5. *Status in Society*: If the research supervisor, collaborators and staff attached to the worker have no status or good-will in a society, the subject selected would have to be within proper dimensions. The arguments in the earlier sections indicated that the mutual relationship of the investigator and those investigated

has a bearing on the extent of social research. Besides the provision of an intellectual equipment, the acquisition of effective instruments of social research like the good-will or the trust which an investigator has cultivated in the society or the authority and institutional hold to which a research worker can lay a claim should also be assembled to make social research effective. It is known that the relations between social groups are historically determined. It is one thing for the social investigator to formulate a conclusion that the group systems should vanish. But it is another thing and quite a consistent one with the former to take care to see that the one or the other social groups in the society recognise him as a member of its own so that he can get the inside effects of the reaction to social problems. There are facets to an individual's status in society.

(i) What is acquired by effort and training and

(ii) What is inherited and socially imposed.

The latter is not within the social investigator's control. Hence he may have to be aware of the strength and weakness in investigating a social problem.

5.0. Criteria from the Standpoint of the Research Problem: (Objective).

The other category of factors which influence the selection is made up of the definition of the problem, its terminology, initial assumptions, related areas of enquiry, reasonable location of the theme, and its scientific nature. Regardless of an investigator a social problem cannot take many attributors and regardless of the society and the individual we cannot speak of the objec-

tive features of a social problem. Without the society and individual a human or a problem cannot arise. Nevertheless, certain known attributes of social and individual needs make it possible to enquire into what are broadly objective issues of a given research work.

5.1. *Definition of the Problem*: Before the subject is finalised it would be advantageous to draw an outline of the topic in terms of divisions and sub-divisions, a statement of the limits and scope, orientation, description of the type, source and procedure, evaluation of the limitations and definitions of the terms. The definition of the subject can be locational or expositional or of any other accepted type. The theory of definition is that it crystalizes the scope of the subject in the most suggestive manner possible. The identification of a problem appears to be the most important feature of a definition in human sciences. Defining the obvious is a difficulty which is met with by a social scientist. The previous knowledge of the less scientifically minded, impedes the acceptance of the scientific visions of a known term.

5.2. *Terminological Clarifications*: It would be found that an ill-chosen subject would defy all these nuances and subtleties. The researcher should make sure that he can move forward from related studies to the topic proper with reasonable rapidity and directness. A subject which defies these improvements can be said to be in its infancy. It may have to be provided crutches in the form of new terms and their imputed meanings. Inter disciplinary studies necessitate a high degree of understanding of the related discipline in minimising terms with varied connotations or be-

tween disciplines. Such multi-meaningful terms have to be restricted to a minimum. One who is being initiated into research would do well to steer clear of problems that start terminological innovations.

5.3. *Indication of Assumptions*: It is essential to get to know the nature of data and the initial assumptions that have to be handled in the course of research. Intellectual honesty warrants that any limitation in sources and procedures should be frankly, but not apologetically stated. While quoting, authors' assumptions must also be assumed. The indications of assumptions can be partly self-deceptive and contain assumptions which are in the form of popularly known features of the social problems. The time-and behaviour-demands of the situations get altered in due course and under new social stresses. Hence a recorded account of research work should anticipate many types of readers of the work in future generations. The research writer may have to guard himself against the choice of a problem whose character of assumptions is itself a major or controversial field of enquiry.

5.4. *An Assessment of Related Areas*: The thesis topic should be elaborated into a statement of the problem. When one attempts to elaborate a topic like "Economic conditions in Mediaeval and Modern times", it would be found too broad for study and statement as one problem. The research worker would be expected to know many aspects of history and economics. On the contrary certain topics may not, being too narrow, lend themselves to scientific elaboration in theoretical terms. The references to the far flung character of human sciences have already been given in earlier sec-

tions. The benefits of spending some time and all the energy one can command in locating the boundary line of the chosen problem in terms of related disciplines would be advantageous. Often an individual who ventures to discuss a problem like rationing without knowledge of some public administration finds that he has to leave many a conclusion far too vague to be of any significance. That a candidate can master a few crutches of a related science is not ruled out of our purview. What is to be taken for granted is that one should keep within limits his new acquisitions and cultivate his known field to great advantage.

5.41. *The Availability of Materials*: The sources of materials are many. Library collections, results of field observations, replies to questionnaire, records of Personal interviews and other channels of communication provide data that may be used for research. Material based research, presupposes the availability of the types of information required. But sooner or later, a researcher is face to face, with the problem of collecting additional data under numerous hazards. When the subject of study is historical research, one has to rely on recorded evidence. There is little scope to institute adequate checks and cross-checks on data, which have but one source. And a bad researcher may not be able to form hypothesis and test it, even if materials are available, whereas a good researcher can impute values to many gaps and construct a plausible proposition for analysis.

5.5. *Scientific Character*: Unscientific, hortatory, argumentative or raw-data topics vitiate the technical character of the enquiry. "Talks to producers on mar-

ket psychology", "Economics in one lesson", "An impressive discourse on the need to return to the village centred self-sufficient economy", "The socio-economic development of India in recent times" and others, of a similar vein may be taken to illustrate, how topics should not be chosen. These topics are unscientific. They are respectively, journalese, hortatory, argumentative and defective in grammar, and too vague and broad in coverage. "The Elasticity of Demand for Edible Oils in the Southern Region of India, with special reference to Gingily Oil (1945-1958)"; "The Pattern of Village Economy in Madras State: A Report of a Survey of Six Villages in 1959"; "The Standard of Living in Southern India during 1944-45", may be given as possible scientific variations of the topics mentioned earlier.

5.51. *Administrative Research*: A selected research problem can be assessed in terms of its enduring importance. Problems of applied economic inquiry cease to have the research character when their methodology and their findings are far too mechanical to necessitate the research tools. Administrative routine in a modern state wants a number of studies which are loosely called research enquiries. Not only are their findings temporary in character but their approach is set down routinely. When the collection of data tends to be biased and the propositions advanced are those which have been settled beyond questioning even at the beginning, the scientific character of choice of a problem is vitiated. Attempting to be mainly popular or political can have its other extreme, viz., seeking to be abstract and vague to be of no significance in any known or foreseen human situation.

6.0. Criteria from the Standpoint of Research Environment:

6.1. *Scientific Opportunities*: The fair tree of human science will blossom and yield fruits only in an environment of scientific opportunities, institutional facilities, and scholastic devotion. In a society, wherein research is held in high esteem, and where large amounts of wealth are endowed to further, it, the opportunities for one to choose a subject for study, are numerous. In terms of number of research monographs, published each year, the United States of America heads the list of English speaking nations. In U.S.S.R. though history and Marxism are taught compulsorily in all higher institutions and to all pupils, the relationship of scientific workers in Economics to the total number of research workers was only 3·7% in 1955. Out of 223,893 scientific workers 8,247 were either "Kandidats" or Doctor of Science workers in Economics.[8] Nearly 27% and 11% of the scientists were technologists and medical researchers. The relative emphasis placed on a given subject, by the authorities in a Planned Economy is an indicator of the extent to which selection of research problems can be attempted in that subject. The number of candidates at work may not by itself be an indication of the quality of the subject selected for research.

6.2. *Institutional Support*: The institutional facilities in the nature of provision of grants, staff support,

8. Pashkov, A. I.: *Political Economy.* (International Social Science Journal, UNESCO, Paris, 1959, Vol. XI, No. 2), p. 167.

library aids and means of travel would strengthen the area of research. The research environment pertains to the place of work, the home, the calibre and character of associates at work, the society, the country of birth and the period in which one works. Most of these are beyond the control of the researcher. Modern economic or social research is expensive. If we assess the current money and time outlay on the standards set by the precursors in social research during the 18th or 19th centuries, research in those days was mainly speculative and experimental and impressive only to a negligible extent. The opportunities to get access to large quantities of economic or social data in recent times has made it possible to organise exhaustive modern research. Nevertheless, the social scientists are in a predicament as regards the procurement of institutional funds for research. The yard stick by which the eligibility for grants is determined ought to be comparable between Physical and Social Sciences.

6.3. *Scholastic Background:* The social values of the people, their moderation and objectivity in the appraisal of situations and their historical background of scholarship are vital factors which influence selection. A land of people who speak only in superlative terms of everything they know and who revel in wrong applications of statistics and other sciences of measurement, may not provide a healthy situation. Qualitative research would suffer owing to the adversities of scholastic background. Before the selection of the problem is made, the environment as it is found must be taken for granted. In any given short period the environment is a non-adjustable factor. There are subjects

which involve visits to libraries, collection of data in archives and painstaking perusal of numerous old records, without the importance attached to intellectual penetration of the problem at a very high level. In any sphere of research one has to take infinite care and efforts in analysing the facts. But the degree of combination of hard work, of field study and intellectual gymnastics, may have to be finalised on the basis of one's preferences.

7.0. Research as a Process:

Whether a research worker is aware or not of his potentialities, he forms a definite factor in the process of the development of knowledge. The responsibility cast on him to select a problem, in this context, has to be shouldered. The criteria of originality, importance to the given sphere, scientific attitude, self-examination, and preparedness to learn anew kindred subjects must be met.

The research worker is thus aware of his role in maintaining the continuity of the process of improvement of knowledge. The two facets of an awareness of this position are (1) organisation of research by permanent bodies, which can assure continuity of enquiry, (2) organisation of research by teams of workers, to enable each team to build up a school of continuous thought, on the secure foundation of inter-disciplinary knowledge.

Knowledge as a force of social organisation, has many facets. The important among them being, (a) the formation of new branches of knowledge, and (b) the dissemination of accumulated knowledge. There

is scope for research at these levels. It is futile to raise controversy regarding their relative superiority so long as there is a high degree of interdependence between them.

7.1. *Originality*: Library guides indicate what has been accomplished. A planned, deliberate and repetitive study is different from accidental or blind duplication owing to ignorance. The same title may not always mean that the subject matter and technique of study are likely to be the same. In historical or growth studies the subject may be the same, but the periods and countries covered would be different. The term "originality" raises very high expectations of novelty in the minds of those unaccustomed to research. They look for very rare and strange revelations, which are based on firm reasoning. And it is not uncommon to conjure up extra-sensory abilities on the part of the persons who lay claim to originality. The experienced researcher will hesitate to own such extraordinary traits. The unfinished labours of an earlier band of scholars, await the fruit gatherers. Many have left their tasks almost done, and a few have their turn to become discoverers and originators. Learned men know their indebtedness to their forbears.

7.2. *Importance to the given Sphere*: The problem-solving studies, timely resurveys, the test-enquiries to assess the relevance of old studies to the new periods, and research projects which verify and cross-check the findings of similar projects bear importance to the chosen sphere. The importance to the given field is judged in the context of work done, and gaps found. A central problem of the study, may not need

attention, if it had already engaged the attention of many scholars. A pedestrian choice of problems, wide in coverage, often turns out to be crucial for enquiry, if an unknown but essential feature of the problem is isolated and studied. It is therefore to the advantage of a young research worker to redefine the limits of his theme after a careful appraisal of the importance of the theme.

7.3. *Scientific Attitude*: The scientific attitude rests upon one fundamental article of faith — the faith in the universality of cause and effect. Successful research calls for command of the appropriate technical methods, imagination and industry, to the full extent to which the selected problem requires.[9] There are many dangers to scientific attitude and a few of them are considered elsewhere in this paper.

7.4. *Self-examination*: The humbling thought that one is always a student, however much one has studied, would keep the window of the mind quite open and allow fresh light on his enquiries. From time to time the researcher should subject himself to self-examination to satisfy himself that he is keeping himself informed of the progress recorded in his subject, that he is unlearning what has proved to be false, and that he is in quest of learning in the desired direction.

7.5. *Preparedness to Learn*: It would also spur the man to qualify himself in new and related areas of knowledge. An economist in his pursuit of research in the selected area, would find himself in the realms

9. YOUNG, PAULINE, V.: *Scientific Social Surveys and Research.* (Prentice Hall Inc., Englewood, Cliffs, New Jersey 1956), pp. 115-116.

of Anthropology, History, Ancient Law, Sociology, Psychology, Econometrics or another kindred subject. At the stage of selection of the problem — a self-examination of the needs of and potentialities for scholarship is essential. The unending succession of researchers forms a discontinuous ray of knowledge transcending time and space. And the process of research makes exacting demands on the selection and execution of a project.

8.0. Realisation of Human Limitations:

The realisation of one's limitations makes way for apposite selection of a problem.

8.1. *Human Susceptibilities*: Scientists and scholars are humans, with the joys of discovery, invention and truth finding, and the disappointments of wrong hypothesis, inadequate techniques, physical, psychological or material handicaps. There are humans and humans. Some are adventurous and others are pedestrian. A few are satisfied with nothing but the outstanding product of thinking and research. Many are happy if their names get a place on the title page of a bundle of printed sheets bound in bookshape.

8.2. *Research Mindedness*: Only a few that form the former category can be research workers worth the name. They form the apex of the educated class, and even if they err in the selection of a research problem, they would soon turn the corner.

8.3. *Non-research Mindedness*: Those of the latter category, composed of the lower strata of the educated are likely to commit one or more of the falla-

cies of narrowness and isolation in thinking, of prominence for words over ideas, of uncritical reliance on "received systems of thought" and of emotional and anthropomorphic ways of reacting to situations. Francis Bacon refers to their fallacies as idols of the cave, the idols of the forum, the idols of the market place and the idols of the tribe, which constitute danger to scientific attitude. The non-research minded persons cannot select or do justice to a chosen problem.

8.4. *Research by a Unit of Mixed Talent*: In situations which call forth a band of research workers to form a unit, the real strength of the unit should be taken as the measure of the ability and reliability of the weakest member of the staff. Apart from other considerations, those of cost would stand in the way of recruiting adequate quantum and desired quality of personnel. Cost-return calculations do arise in the selection of a problem by institutions and individuals. Comte, after losing his position and suffering other reverses, found his income very much reduced and had to seek the help of J. S. Mill, who raised a gift of 20,000 francs for Comte, in order that he might continue his study, and publish his researches. These are human standards of limitations in addition to the other standards of selection set forth earlier in respect of the research worker, his problem and environment.

9.0. A TEST OF THE SELECTION:

The feasibility of research study needs an appraisal.

9.1. *Hypothesis as a Test-tool*: A thread that runs through the subject is the hypothesis. It is a "shrewd guess" which is provisionally adopted to ex-

plain observed facts and conditions. If the elaborated hypothesis fits in the facts, a theory is formed. As a guide to research, hypothesis is valuable. A test of the hypothesis would reveal the scope for minor adjustments in the purposiveness, deliberateness and rationality of the subject of study.

9.2. *Null Hypothesis*: One may start with a "null hypothesis" developed by R. A. Fisher, that no significant difference or relationship exists and then seek to ascertain the improbability of the null hypothesis. The sources of hypothesis are insight, knowledge and imagination.

9.3. *Subsequent Stages*: The subsequent stages of intellectualization, elimination or modification of working hypothesis, and mental elaboration are of significance to the study of how the thesis is completed. That is, to go beyond the scope of selection of a research problem.

10. Recent Institutional Measures to Aid the Selection of a Research Problem.

10.1. *Specialised agencies of the United Nations, Universities and Institutions*: In recent years, there have been organised efforts by international bodies like the UNESCO,[10] IMF, ECAFE, and other agencies by

10. UNESCO. *Social Science Bibliography*, India (including Pakistan), Unesco Research Centre, (Calcutta). South Asia Social Science Abstracts (issued from 1952 to 1956. Social Science Office, Unesco South Co-operation Office, New Delhi). (Continued from Jan. 1956 by the Unesco Centre, Calcutta). International Social Science Journal, (Quarterly, Part II, relating to current studies and research) (Unesco, Place de Fomienny, Paris 7).

universities[11] and other centres of learning to facilitate the choice of problem for research. A recent brochure prepared by the Centre for International Studies at the Massachusetts Institute of Technology, attempts an enumeration of the facets of study of an industry, so as to enable the studies to be comprehensive under sixteen headings and comparable on the basis of unambiguous identification, uniform classification and coverage of every element of a given industry.[12]

10.2. *Library and Micro-Film Services*: Library services, international film bibliography of research theses, micro-film synopsis of research reports and other scientific media of dissemination of research intelligence obviate wastefulness in duplication of efforts and obsoleteness of references. One can therefore be very well read, so as to learn to think on entirely new lines.

10.3. *Relativity of the flow of external aids and the pace of sharpness*: Whether the man in the modern age has sharpened his faculties and strengthened his concentration at a pace which is in keeping with the flow of reading and other scientific aids to communication, and has become keener than men of the early centuries, in the days of Plato or Aristotle or of the puranic and prior ages is open to question. The search for truth is increasing and non-comparable.

11. Inter-University Board. List of subjects in Arts and Sciences. Universities and Research Institutions, (1945 onwards). (Inter-University Board of India, Madras, 1954).

12. HAGEN, EVARETT, E.: *Handbook for Industry Studies.* (Centre for International Studies, Massachusetts Institute of Technology, 1958). (Asia Publishing House, Bombay-Madras, February 1959).

METHODOLOGY OF HISTORICAL RESEARCH IN ECONOMICS

Introduction: In this Paper an attempt is made to enquire into specific problems of methodology which arise in formulating historical hypotheses in economics and in continuing research processes to test them. The features to be so considered are the location of the areas of research, the methods of collecting materials, the analysis of data and the presentation of the findings. A few of these features are of special importance to historical economics, and the rest are common to research in any area, of pure or human science. The character of history necessitates syntheses in the appraisal of events and of their cumulative effects, which have meaning, only when studied in the context of their occurrence and when placed in the broad background of human motivations and multivariate actions. So the longer the period under survey, the deeper becomes the need for many sided social, political and related perspective and learning on the part of the researcher. The methodology of current research may be applied also to a span of time pertaining to the past. So, we can say this: whereas not all theoretical researchers in contemporary economics, can undertake assignments of historical economic research, those who can do the latter can with ease carry out the former task. But many writings on economic history indicate that the methodo-

logy of economic research is simple, descriptive and non-analytical, and so, different from that of economic theory. This null-hypothesis may be tested, in this paper. It is not true either, to state that all historical studies are non-analytical. History, as the term has been used until recently, was mainly a history of political events and of happenings in households of Kings. In subsequent decades historical studies have incorporated the arithmetical and philosophical techniques of interpretation. The use of new tools of thinking has been possible in History. But economic history proper has suffered at the hands of historians for want of the theoretical equipment of economic analysis. Economics is one of the young social sciences. It has made rapid advances in the post First World War period. As such it can be said that the period of assimilation of economic thoughts in the body of related disciplines has not yet taken place. The terms "Economic Development", "Economic Growth", and "Economic Progress" are now applied to analytical studies of economic history.

2.0. Features of History and Economic History

2.1. *History* is in quest of the fundamental truth. What we gather in every science is only a particle of truth. Each additional particle found, does not replace the earlier truth. It makes a compound of the enlarged fundamental truth. The history of economic thought or of mathematics, or of any one subject may form a bit of truth-finding history of human quest. The history of a science undergoes methodological changes, and consequent on such changes, the analysis and clarity of thought are very much aided. The character of these changes is that it is everchanging. Viewed in proper

perspective, it would appear that history has neither beginning nor end, except what the human mind, in its limited range, tentatively fixes. History precedes every experience to the extent that it has had roots in an earlier event. And even when one is not able to perceive the antecedents of an event, the antecedents in facts are there. They are revealed in due time. The causation of events is a study which is as far flung as the multiple character of a given cause-situation. History of new disciplines like sociology, psychology, political science, are traceable to a common parent discipline, moral philosophy. With the expansion of new sciences the study of history tends to be a study of a collection of special subjects.

2.2. *Is History a Science?* It is not the goal alone that makes a science. History, as it has frequently been written, confined its coverage to the emergence of religion, rise and fall of empires, dynasties, royal households, political systems and to the social life of peoples. Arnold Toyenbee[1] still holds the view that history is theology, i.e., an interaction of God and man, and that it deals with not only the mundane but also with the supra-mundane affairs. However, warriors and statesmen about whom much of history is read, had little regard for it. Napoleon characterised history as a "fable agreed upon" and Robert Walpole, the first Prime Minister of England, said that all history is a lie. The nature of data employed, the authenticity of their source, the rigour of deduction and the objectivity of

1. TOYENBEE, A. J.: *A Study in History*, Vol. X, No. E.P. 126 (London, 1954) (Oxford).

enquiry have left much to be desired in the historical accounts. Hence, the disrepute into which such accounts have fallen. Basically history is science to the extent it can and it does employ scientific methodology. The limitations like the absence of scope for experimentation and verification, are common to many human sciences, like economics, sociology, and history. What detracts from the scientific character of history are its subjective, conjectural and philosophical attributes.[2]

2.3. *Economic History as Science*: Early works on economic history were chronological and/or thematic collections of information.[3] That the authors were well informed and well-intentioned may be taken for granted. But the techniques they had used and the undue political bias that they had imparted to their studies, rendered them, unscientific. In the last few decades efforts have been made to deem economic history as a scientific discipline. Sir John Clapham refers to modern methodological distinctiveness which hinges primarily on its marked quantitative interests. For this reason it is or should be the most exact branch of history.[4] An important attitudinal change is yet to take

2. HEGEL, G. W. F.: *The Philosophy of History.* (The Colonial Press, New York, 1900), pp. 4-7.

3. DUTT, ROMESH: *The Economic History of India Under Early British Rule.* (Kegan, Paul, Trench, Truber & Co., 1901) "The economic laws which operate in India are the same as in other countries of the world; the causes which impoverish other nations impoverish the people of India" (p. vii). The subject matter of the book does not justify this hypothesis. Recent literature on the theories of economic growth suggest the contrary.

4. CLAPHAM, J. A.: *Economic History as a Discipline.* (Enterprise and Secular Change, Ed. F. C. Lane and Jelle C. Riemersma, George Allen and Unwin Ltd; London, 1953), p. 415.

place. There is a marked difference in the level of treatment of a given contemporary economic problem and its precursors.

"To argue for separating the method of such a study when it applies to earlier ages from that which is used for the problems of to-day is certainly not admissible without actual proof."[5] Current economic theory and economic history may belong to different periods. But unless the techniques and reasoning employed in current studies are applied to data of economic history, the comparability of events and prognostic value of the subject would be lost. The collection of historical data has had but one objective, to pursue given facts over a period of years, so as to know the nature of continuity. To what extent one fact influences the rest of the given facts, is a type of study that has not been possible in the past on account of the inadequacy of the model methodological tools of statistics, of economic science and of cognate social sciences.

3.0. Location of the Areas of Research

3.1. *Concepts and Institutions.* Continuity of concepts and institutions can be perceived in the history of economic life. Very often the institution of an earlier day, lingers on even after it had outlived its purpose. "Much of the wrong in England of the Victorian Age was attributable to the laws and customs which belonged to an earlier age."[6] Idealisation of the

5. Heckscher, Eli. F.: *A Plea for Theory in Economic History,* (Enterprise and Secular Change, *Op.Cit.*), p. 422.

6. Ashton, T. S.: *The Treatment of Capitalism by Historians.* (Capitalism and Historians, Ed., F. A. Hayek, Routeledge and Kegan Paul Ltd., London, 1954), p. 35.

domestic workers and of the agriculturists' way of life are conceptual legacies of a bygone age with no economic basis in the present context of India. However, the economic implications of these concepts have to be studied to test their validity. It is found that certain habits of consumption are the product of prejudice or pride. For instance, there was growing use of tea in the early 18th and 19th centuries, in England. It would be rash to deem that usage as an index of increasing standard of living. In fact it was "growing poverty" that made tea increasingly essential to lower classes. The price of ale had risen beyond their means.[7]

Whereas broad indications of the standard of living may be based on a few indicators of consumption, abundant studies of economic values of the period in terms of their attitude to work, rewards and consumption habits would be essential, to assess accurately the living conditions in the past. Besides these, private property, capitalism, barter, and Industrialism may be cited as a few illustrations of the areas of research in concepts and institutions. In historical economic research, Karl Marx was adventurous. He dealt with institutional economics, though the vague term "materialistic interpretation of history" is applied to his works. The term implies that the flora and fauna which are materialistic but not always "economic", in the sense of being scarce in relation to wants, also form the subject matter of his studies. Such things, rightly, were of no concern to him. His critical analysis of

7. PARKINSON, C. N.: *Trade in the Eastern Seas, Op. cit.*, p. 94.

capitalist method of production and development of the "General Law of Capitalist Accumulation",[8] are considered to be major contributions to the theory of economic history. He has blazed a new and promising path in the wilderness of human thought and human progress.[9] Both Marxism and Rostow's revised thesis[9a] on Economic growth are "explorations of the consequences of building compound interest into society's habits and institutions." Rostow's stages: (1) traditional society, (2) preconditions, (3) take-off, (4) maturity and (5) high consumption, are comparable to Marxian: (1) feudalism, (2) bourgeois capitalism, (3) socialism and (4) communism. These are seeming parallels which on closer study reveal the non-comparable character. Marxian system provided only under exceptional circumstances for the gradual evolution of the society. Rostow's stages assume a continuous change based on the gradualness of the market influences of the free society. Nevertheless, as man's command over the natural resources increases, it becomes feasible for him to have increasing number of his wants satisfied, without dissatisfying certain classes or individuals. An overall growth of incomes and wealth of nations accounts for this.

8. MARX, KARL: *Capital: A Critical Analysis of Capitalist Production.* Ed. Frederick Engels. Tr. Dona Torr. (George Allen & Unwin, Ltd., London, 1946), pp. 655-664.

9. SELIGMAN, E. R. A.: *The Economic Interpretation of History* (Columbia University Press, New York, 1912), p. 162.

9a. ROSTOW, W. W.: *An Economic Historian's Way of Envisaging the Sweep of Modern History* (Cambridge lectures) (Economist, London, 15th Aug. and 22nd Aug., 1959, pp. 409-416, and pp. 524-531),

3.2. *Geo-Political Units.* The study of economic problems over a period of time, implies that related issues of social, political and cultural history should be properly thought of. It is difficult to think of a more convenient unit of population than that which constitutes a State. Wherever multi national states are in existence the unit of study can be one of the national groups of the State. Certain minorities, like Jews of Germany in the pre-war (1939) period, Muslims in India, Indians in Ceylon and in Malaya, and similar geo-political entities have certain special problems of economic history which are research-worthy. Certain states of Europe, especially Norway and Sweden, may be taken together to constitute an Unit, even though in strict political sense they are two distinct units. Both the history and culture of the peoples of the two states have so much in common that it is possible to present the problems of economic history as of one pattern. Regional economic studies of India, of United States of America, of Union of Soviet Socialist Republics and of other continental economies have been and are being studied with reference to certain periods of history. Either specific national studies, each covering one problem of the whole country, or general and comprehensive studies, each covering a compact part or region of a country may be chosen for research. The results would provide materials for a comprehensive economic history of the country. In India, there were but few attempts and consequently the economic history of the country remains incomplete. Whether the studies are national or regional, the application of theories to

situations, and the use of tools to analyse data should be, satisfactory. However, the few national[10] and regional[11] studies of India that were prepared happened to be mere descriptive accounts, nearer to history proper, than to economic history. Economic theories have not been applied to study the conditions, except in a few studies. In this context, as an exception, the poineering and pathbreaking study of the Industrial Development of Mysore by R. Balakrishna,[12] may be referred to. Firstly, it applied the theories of Industrial Economics to the region of Mysore and secondly, as a scientific feature, it embodies the application of the theories of International Trade by Bertil Ohlin Heberler and Viner to the semi-autonomous economy of Mysore. In the later respect, this study (completed in 1939) is a valuable theoretical forerunner to the modern "country" or "industry" approach of economists to compile social accounts of regions and rural-urban sectors. This is the technique which W. W. Leontief advocates and finds quite valuable. "Inter-regional and inter-industry accounts are prepared by treating each 'industry' or 'region' as a single accounting entity, comparable to a 'country' in official foreign

10. GADGIL, D. R.: *The Industrial Evolution of India in Recent Times.* (Oxford University Press, Bombay, 1924). It employs simple descriptive methodology.

11. RAJU, A. SARADA: *Economic Conditions in Madras Presidency.* (University of Madras, 1914). It provides abundant sector-wise information. The only tool of relative measure employed is that of Index numbers for the period 1800/50.

12. BALAKRISHNA, R.: *Industrial Development of Mysore.* (Bangalore Press, Bangalore, 1940), Chap. VIII, and esp. pp. 232, 236 and 240.

trade statistics."[13] This approach is widely in practice in the structural and developmental enquiries.

3.3. *Factors and Factor Rewards*: The terms[14] are used to refer to the basic ingredients which are brought into cooperation so as to produce a good or a service, and the rewards obtained by them. Labour and capital, have received much attention. With the development of agronomy, land and its potentialities have been well studied. It is difficult to isolate enterpreneurship, managerial ability, supervisory talent, technical skill and similar factors, so as to assess the specific productivity of any one of them. Certain mathematical models and other techniques have to be used in such situations. In recent years efforts have been made to compile national income accounts in terms of factor incomes and therein factorial rewards have had adequate attention. When one enquires into the conditions of the past, certain difficulties of measurement, arise, and some very competent economic historians have been misled. Conflicting views, for instance, on housing in United Kingdom were expressed by Sir John Clapham,[15] Mrs. Dorothy George,[16] and Prof. T. S. Ashton.[17] Clapham said that the English towns of the mid-century were less crowded than the great towns

13. LEONTIEF, W. W.: *The Structure of American Economy, 1919-39*, (New York, 1951), p. 4 and Studies in the Structure of the American Economy, Ed. W. Leontief.

14. The word Factor has been used in records of the East India Company to refer to a commission agent, i.e., a cotton factor.

15. CLAPHAM, J. A.: *An Economic History of Modern Britain*, (Cambridge, 1926, I), p. 548.

16. GEORGE, M. DOROTHY: *London Life in the Eighteenth Century*, (Kegan, Paul, Trench, Truber & Co., London, 1926), p. 73.

17. ASHTON, T. S.: *Op. Cit.*, p. 45.

of other nations and not universally more insanitary. George believed that the housing conditions had improved. In fact, Ashton, had data to prove that the contrary is true in respect of housing and wages. He said: "The workers were pressed into back-to-back houses like sardines in a rabbit warren." He attempted to study the question as one of technicality of housing and social responsibility. The inferior materials such as ashes and street sweeping used in making bricks and unstable walls, rise in prices and wages by 80% to 100% during the period and the unwillingness of the short-lease holders to effect proper repairs, had lead to housing deterioration. Ashton, stated, as example, that it was in that period houses had collapsed burying sixteen people in Houghton Street, exactly where the present concrete buildings of the School of Economics stand. In the aforesaid areas of study, one should rely on carefully chosen and worked out indications like, standards of housing, materials in use, work-wage ratio and similar ratios.

3.4. *Consumption and standard of living.* In the past there were few attempts at a study of the continuity of consumption habits and standard of living. Keynes in recent years paid some attention to this area. Important variation in consumption in respect of variety, quantity and quality and in income, in respect of classes and their relative significance should be assessed. Certain conventional ideas on the importance of prices and incomes have to be tested. In fact, what we were accustomed to think, i.e. that the demand for food, or for any commodity, is determined by price and income and could be measured by price

and income elasticity, is now proved to be erroneous.[18] The effect of income appears to be many-sided. A new and recent technique in the study is to find out the saturation-demand for a commodity, like food,—the demand beyond which a consumer does not go however high his income, and then to express each demand observed as a percentage of saturation demand, which can be related to the logarithm of real incomes. If a curve so plotted is "S" shaped it implies that the income elasticity of demand is increasing to low incomes and decreasing at high.

3.5. *Micro and Macro Areas*: Viewed in a wide background this recent tendency is attributable to the minuteness of data and analyses that are within the reach of modern researchers. The problem of a firm or industry, the trade of a country or of all countries, the economic pattern of a few households or of all households of a given income level, and similar enquiries can be projected backwards in time. Our knowledge of the economic mechanism of the past would be thus clear. The study of a single firm, which has been in existence for a long time like the Lloyds Bank,[19] or the Unilever,[20] in terms of their money payments and

18. Clark, Colin: *The Conditions of Economic Progress.* (Macmillan & Co. Ltd., London, 1957, Third Edition, largely rewritten), p. 421. Collin Clark approvingly refers to the new technique developed in Cambridge by Messrs Aitchinson and Brown (Vide Economics, October, 1954, and has employed it in his work).

19. Sayers, R. S.: *Lloyds Bank in the History of English Banking* (Oxford at the Clarendon Press, London, 1957), p. 381.

20. Wilson, Charles: *The History of Unilever.* (A study in Economic Growth and Social Change). (Cassell & Co., London, 1954, 2 vols.).

receipts; increase or decrease in debts, raw materials used, output/input of wealth, flow of goods, etc., may prove to be of value. Such projects when completed, offer a wealth of material to set standards for comparison and to devise indicators of growth.

3.6. *State in National Economy.* There has been continuity and, in recent years, rapidity in the increase in the extent of the role of Governments and of the other organs of the State like, the Legislative and the Judiciary, in economic affairs. The State has become the prime mover of economic life. Both vertical and horizontal studies of its impact on several facets of economy could be undertaken. In recent years most of the studies of Governments were in terms of taxation and public expenditure, and their redistributive and developmental effects. With the advent of State Planning, the economic-inter-relationships have perhaps to be studied more closely than before. A negative thesis, that the absence of State Control had depressed wages and swelled profits was developed by Marxian writers. Perhaps, what with the introduction of numerous regulations, and restrictions, and controls in times of exigencies, one can verify the hypothesis that profits have been cut below incentive levels and wages have risen above productivity levels.

3.7. *Synthesis of Historical and Economic Events*: A word of caution is perhaps in order in locating special, chronological or functional areas. Most of the human actions, of whatever economic character they be, have meaning and significance only when noticed in the context of overall economic, sociological and Governmental objectives and means, of the concerned

generations of peoples and periods. Any lateral attempt to tear their actions and reactions out of the moorings would be futile. It is for this reason that the vast literary,—original, interpretative, reflective and philosophical studies made in the past have to be preserved and fostered as background material to economic history. Just as there is a stage at which, in philosophy, there is a halt of reasoning, in economic analysis also there are stages beyond which the process of analyses and rationalisation yield place to syntheses and pragmatism. The subsequent sections of this paper in which certain statistical, mathematical and econometric approaches to the study of economic history are mentioned, may be read with due emphasis on the aforesaid need to synthesize the theoretical findings. Otherwise the precision tools in the hands of the specialist would be of no avail. This caution is more apposite in economic history than in history proper, because quantification and ranking has proceeded rather very far in the realm of the former.

4.0. Collection of Materials:

4.1: *Sources of Historical Materials*: The sources are as numerous and satisfactory as the society which makes available the data has had premium on preserving them. Most organised societies have Record Offices or Archives, which preserve the official records. Apart from these there are the Literary, Epigraphical, Numismatic and Archaeological sources of an earlier age. The official and the non-official would be the important categories of materials, and a detailed account of the two is given hereunder. Other possible categorisations of materials would be, Local and Foreign; Formal and

Informal; Literary and Non-literary; Contemporary and Non-contemporary, Original and Interpretative; Reflective and Philosophical, and the like. The choice of the category depends on the subject, and the materials available. Besides, it would be of great advantage to take advice of learned men who have had experience in a given line of historical research. They would pass on the benefit of their valuable experience and obviate the search for the non-available sources and eliminate the regret for reliance on the non-reliable. Wise counsel is both rare and non-substitutable.

4.2. *Official and Non-official Materials*: If both these sources are available, it is helpful. The checking and cross-checking of data are purificatory devices, which can be employed in such a context. However, more often than not, it is found that only one source is available. Then we have just a Hobson's choice. Official documents are of two types; Formal and Informal. The Treatises, Charters, Grants, Rolls and writs, and other Government accounts may be considered as formal official sources. The informal sources are correspondences, (Public Consultations and Despatches to and from Home Government in respect of Indo-British relations during the early 19th century), Reports, Announcements, and other public notifications. Besides these, there are both formal and informal non-official documents, which are considered elsewhere, in this paper. It is good to avoid the distinction between primary and secondary sources, in the ordinary sense of these words. Original and derived materials, may be considered separately from one another. The non-documentary, epigraphic, numis-

matic and archaeological sources of history are not of much use in economic studies, for they relate to periods for which data are too inadequate to carry out scientific surveys. It would appear proper to leave such studies to historians.

Treaties, the most formal of all official documents relate to kings or other heads of two or more countries. Their impact on economic life would be of a very general nature. The charters which are less solemn than treaties are given by the King to the Corporate body, or to an individual of eminence. Grants, as the term is used in economic history imply conferring of land, privileges, trading rights and similar benefits by the King or Government. In the modern usage of public finance, it has acquired certain specific characteristics, of inter-governmental relations and public outlays. Grants are now governed by certain principles of action, which were absent under absolute monarchy. The Roll[21] is an Official document of the British Courts of Record, from the early middle ages down to the present time. The Writ, issued either by the Governments of the past or by the Courts of the present and recent past, are formal communications embodying orders on subordinate agencies and private individuals. The language of the documents, the usage of words, and their specific connotations, the accuracy of transcriptions, where originals are replaced by hand-written copies, should be carefully examined. In the past, as at present, Government had employed Secret Services

21. WILLIAMS, L. R. RUSHBROOK: *The Handling of Historical Material.* (Longmans, Green & Co., London, 1917, pp. 13 and 20).

and prepared confidential reports of contemporary events. With the passage of time most of the materials of that kind, become "open documents". The practice of the Government of Madras has been to declare the records of the archives available to authorised research workers upon the year preceding the last-fifty-year-period. In 1960, one can consult records of all nature up to 1910, and for the later years only printed records already available to the public would be available for study. This restriction, on the use of the materials in Madras Record Office, which has one of the world's rare and large collections of ancient official records, is of an administrative nature and can be liberalised in particular cases. These records of the past four centuries are in Portuguese, Dutch, French and Dravidian languages, besides those in English. In collecting materials, the nonfamiliarity with the languages need not be considered as absolute barriers, because the language experts would be able to solve the problems of translation if one cannot learn the languages.

The non-official records, like the financial accounts of the East India Company, during its early career, are of immense help. The details of monetary, trade and other transactions, given in correspondences provide subsidiary data on the food consumption of the local people; the dress worn by them, the nature of domestic economy and related issues. The non-official records of the zamindars, princes, local leaders, private religious and charitable trusts, mutts and other organised bodies provide materials both for addition to data and for cross-checking. The will, bond, private accounts, and letters of a quasi-official nature are formal non-

official sources. The chronicle, the memoirs, travel narratives, biographies and other scholastic and popular writings of contemporary men may be taken as informal non-official sources.

4.3. *The Evaluation of Materials*: Special caution to be exercised may be both external and internal. Externally one should examine authenticity, avoidance of errors of transcription, wrong decoding of pseudonames, exposure of hoaxes, forgeries, exaggeration, suppression of facts, and distortions. Internally, reliability, gap between literal meaning and real meaning, notions of symbolism and truthfulness, impartiality of racial, religious, national and other volitions should be assessed. In the foregoing account alongside the examination of different categories of materials the need to evaluate them has also been pointed out. It may not always be possible for the economic historian to obtain ideal sources. But it should be possible for and also considered essential by him, to state clearly the limitations of the sources and the internal and external inconsistencies and defects which he had observed. Thus the objectivity of the work is enhanced.

5.0. ANALYSIS OF MATERIALS:

5.1. *Outlook*: The final product of historical economic research would have to be synthesis. But the processes and the tools of analysis are scientific, precise and analytical. Vague statements like, "long before 1858 when East India Company's rule ended, India had ceased to be a great manufacturing country. Agriculture had virtually become the one remaining source

of the nation's subsistence"[22] or "famine was desolating Bombay .... Industries and manufactures had declined in Bengal and in Madras,"[23] would not constitute statements of research. Exactness, proofs and refinements in expression are wanting. Until recently most of the economic histories of Europe and of India, were purely literary and descriptive because the tools of modern economics and allied sciences have not been used. The applicability of modern techniques may be briefly outlined here.

5.2. *National and Social Accounts*: National income is defined by Kuznets as "the net value of all economic goods produced by the nation".[24] He accepted that each term in the definition, "Net Value", "Economic Goods" "Produced", "Nation" is subject to controversy and differences in treatment from time to time, country to country and investigator to investigator. His definition is now considered to be inadequate to meet all needs. It however serves the orthodox purpose of finding out the overall income-expenditure account of a country. Recently, national income concepts were refined. It is now held that there is not a single national income estimate as such,[25] except in the context of a given objective like indication of currently available resources, or net addition to wealth in value terms, or comparison of the earnings of

22. DUTT, ROMESH: *Victorian Age, Op. Cit.*, p. vii.
23. DUTT, ROMESH: *Early British Rule, Op. Cit.*, p. 257.
24. KUZNETS, SIMON: *National Income and Social Accounting* (Hutchinson's University Library, London, 1954), pp. 74-75.
25. EDEY, HAROLD C. AND PEACOCK ALAN, T.: *National Income and Social Accounting* (Hutchinson's University Library, London, 1954), pp. 74-75.

different regions of an economy, or similar objectives. The components of calculation and the results arrived at, differ markedly depending upon the objective. For our purposes it would be necessary to collect data on any one basis for a long period of time. Adjustments thereto could be later on effected, even if data were not forthcoming for other bases of study. Such an estimate would give an overall idea of the economy. Recently attempts have been made to compute afresh[26] the resource-output trends of United States of America since 1870. With changes in definitions, resurveys had become inevitable. The Indian Income estimate of Dadabai Naoroji (1876) for the year 1868 as 20 crores of Rupees was a mere guess work. He roughly worked out individual income on Physiocratic concept of excluding services, and conjectured the total national income. William Digby (1902) guessed it at Rs. 18 crores for 1899, which was a year of famine. F. G. Atkinson (1908) gave estimates for 1875 and 1895 at Rs. 27 crores and 35 crores. V. K. R. V. Rao (1940) applied income and inventory methods to arrive at the figure of Rs. 62 crores plus or minus 6% for the year 1931-32. Recently the Government of India have given (1951) revised estimates, but that was not the result of any outstanding improvement in techniques. The inherent defect in the preparation of national social accounts in under-developed countries has been pointed out by Phyllis Deane as the absence of two way

26. ABRAMOVITZ, MOSES: *Resource and Output Trends in the United States since* 1870, (Report No. 52, National Bureau of Economic Research, New York, 1956) (American Economic Association, Papers and Proceedings, Dec. 1955), pp. 5-23.

equal money flows. The sub-accounts of households, enterprises, and other undertakings are not also easily available. The preparation of proper accounts at all levels should be improved before attempts could be made to apply these techniques through time, in history. Such estimates as are available in other countries, have an advantage in that they can prepare afresh estimates on up-to-date and comparable international basis. The problems of international comparison of economic accounts is being tackled by the United Nations agencies and the other private bodies.[27] Such comparisons are necessary to understand the growth patterns.

5.3. *Time Series:* When a long period is to be considered in space and time simultaneously, time-series analysis is necessary. Two kinds of time-series which could be employed are (i) Period-data Time Series and (ii) Point-data Time Series. The amount of sales in a day, week, month or a year, income of a national per unit of time, and the like constitute period data. Non-duplicate total over a period of time could be built up with the aid of these figures. Instantaneous observations in time like, wealth at a date, bank balance, inventory price or similar spot observations provide point data time series. Time series are employed in many scientific fields and the usage is as old as astronomy. If inter-relationships are to be observed, the time series data may be split up to show calender variation, secular trend, recurrent fluctuations—both

27. N. B. E. R.: *Problems in the International Comparison of Economic Accounts* (Studies in Income and Wealth, Vol. 20, Princeton, 1957), pp. 4-18, and 346.

periodic and non-periodic, episodic variations—big accidents, and random irregular variations—little accidents. The time series handle both the major and minor components. The choice of the appropriate time-series is mainly one of details, and nature of transactions. Trade and production data are indicative of calender variation. Long-time slow moving forces cause growth or decline and the secular trends indicate these features. The growth of population, income in a country, the disuse of conventional modes of travel with the advent of new modes and similar features also relate to the secular trend. Certain unexpected events like strikes, wars, floods, earthquakes cause episodic variation. Random variations of a minor character are termed "little accidents" and the saw-toothed chart indicates these variations. The linear trend has a continuous positive or negative slope and it holds good for most studies with a period of thirty years or less. For longer periods of analysis, Econometric Models of progress have to be set. The time series give clues to the economist and are specially helpful in presenting the cyclical tendencies. Wesley Clair Mitchell developed direct harmonic methods of measuring the trends of the trade cycles and applied the equations obtained, for forecasting. An economic historian can apply the gear in the reverse and find out the condition in the distant past. W. W. Rostow, who has followed simple time Series techniques, worked out four periods of Secular rise in prices in United Kingdom (a) 1793-1815; (b) 1848-1873; (c) 1896-1920 and (d) 1935-1953. He referred to three periods of falling prices; (a) 1815-1848; (b) 1873-1896 and (c) 1920-1935. Having indicated these secu-

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lar trends Rostow has numerous disclaimers[28] as to what he does not propose to draw as conclusions. It is an attitude characteristic of the many causes which an elegant trend can hide. Certain compensating forces and functions are concealed by trends. One has to depend on the co-efficients of correlation, which bring about linearity, and on other functions.

5.4. *Index Numbers*: Index numbers are ratios which measure the combined change of several variables between two different times, places or situations. The important economic indices are price index, value index, quantity index and trade index. These indices can be obtained for long periods of time. W. S. Jevons used the price index as early as 1863 in his tract: "A Serious Fall in the Value of Gold Ascertained". Problems peculiar to economic history arise out of the obsolescence of certain goods, the inadequacy of direct data, the replacement of data, and choice of general base period. How slippery the ground to be covered thus is, can be illustrated. Sir William Beveridge in his study of trade cycles in Britain before 1850, attempted to use the net iron import as a "replacement" datum for iron-production from 1790 to 1828. The quantity of exports, available for a major part of the period would have served him better. That was proved by subsequent statistical studies. The downward trend shown by net iron imports of bar iron during the period was exactly opposite to actual rise in iron production during the period. Beveridge's "replacement" in index-num-

28. ROSTOW, W. W.: *British Economy of the Nineteenth Century.* (Oxford, 1948), pp. 31-32, 31-57.

ber computation gave him the wrong answer. Such pitfalls do arise, owing to want of data[29] and inadequate caution in replacing data. Further, the choice of the base year is seldom done satisfactorily by an author when the mass of data to be handled weigh on him. W. W. Rostow in his closely related two studies[30] used several bases, (i.e.) 1840-50 for a table of trends in selected British prices, 1840 for cyclical movements of prices in foreign trade, 1913, for an index of industrial production, and 1900 for most of his narratives of economic growth. Most of the tables would have served their purpose of comparability if they had been recast on an agreed base year. Besides, the choice of an appropriate base year, it is also necessary to select the suitable method of computing the index number.

5.5. *Correlation and curve fitting*: When there is a joint variation in two variables a simple correlation can be worked out. Positive or negative correlation indicates the magnitude and direction of change, in the variables. However, there are certain attributes which cannot be exactly measured. It would be specially so in respect of past events, the measureableness of which is affected by time. The rank correlation can be found out in such situations. It is done by arraying the data with imputed values. To this the fitting of a second degree or higher degree plynomials would settle the

29. GAYER, ARTHER, D., ROSTOW, W. W. AND SCHWARTZ, ANNA, J.: *The Growth and Fluctuation of the British Economy,* 1790-1859 (Oxford, 1953), Vol. II, pp. 616-617.

30. ROSTOW, W. W.: *British Economy of the Nineteenth Century, Op. Cit.,* p. 222. *The Process of Economic Growth* (Oxford, 1953), pp. 268, 271, 272-275.

exact mathematical relations applicable to the variables. It may rightly be argued that these correlations by themselves do not speak out the whole truth and that it is the responsibility of the economic historian to bring to bear on the indicated relationships, his special knowledge of events of non-mathematical, and of economic character.

5.6. *Econometrics*: The development of this new science has augured well for historical economics and allied studies. It comprehends what simple and elegant equations cannot cover. Its techniques are applicable to non-experimental observations. And as L. R. Klein aptly says, "since the data used in econometrics are gathered from economic processes we may conclude that econometrics is a way of studying history—a very systematic way".[31] The usefulness of this discipline in the field of long-term reactions, is emphasised by Tinbergen.[32] A statement, say, under perfect competition the marginal productivity of labour is equal to real wage rate, can be econometrically tested. The underlying force is the technological relationship which transforms inputs into outputs. Let this production function be as $x = f\ (n, c, d)$ .. (1.1)

It means that nothing more or less than (n, c, d) are transformed into "x". In reality, however, there is some inexactitude. Hence a random variable "u" may be introduced. $x = f\ (n, c, d, u)$ .. (1.2)

31. Klein, Lawrence, R.: *Econometrics*, (Row, Paterson & Co., New York, 1953), pp. 2-16.

32. Tinbergen, J.: *Econometrics*, (George Allen & Unwin Ltd., London, 1951), pp. 156-157.

Supposing that the "*f*" is quadratic, the production function may be written as

$$x = \alpha_0 + \alpha_1 n + \alpha_2 c + \alpha_3 d + \alpha_4 n^2 + \alpha_5 c^2 + \alpha_6 d^2 + \alpha_7 nc + \alpha_8 nd + \alpha_9 cd + u \quad .. \quad (1.3)$$

The numerical values of the parameters must be established. So as to eliminate one variable "C" or "*d*" we may take for granted the engineer's version of technological relationship of capital and labour, i.e., so many man-hours per unit of capital

$$c = \alpha d \quad .. \quad (1.4)$$

By the combination of (1.4) with either of the production functions (1.3) or with that given by Cobb-Douglas type, with "C" for fuel consumption and D for machine hours

$$x = An^{\alpha_1} C^{\alpha 1_2} d^{\alpha 1_3} u \quad .. \quad (1.5)$$

Thus the marginal productivity of labour could be expressed:

On the basis of (1.3) $a_1 + 2a_4 n + a_7 c + a_8 d$

and on the basis of (1.4) $a_1 + 2a_4 n + a_7 d + a_8 d$

The mathematical formulation would be then, denoting "W" and "P" as wage rate and price of output.

$$\frac{\theta x}{\theta n} = \alpha_1 + 2\alpha_4 n + \alpha_7 \alpha d + \alpha_8 d = \frac{W}{P} \quad .. \quad (1.6)$$

assuming that there is optimum entrepreneurship. This is an unreal assumption. So an "inexactitude" may be introduced as random error and we have a stochastic relation

$$= \alpha_1 2\alpha_4 n + \alpha_7 + \alpha d + \alpha_8 = \frac{W}{P} + v \quad .. \quad (1.7)$$

Where "v" is a random variable with definite probabilistic features. Of these relationships, (1.3) has technical bias, and (1.7) has economic-theoretical bias. Both of them are structural equations which can be used for setting models, to study with the aid of a given data, problems of the past and of the future. Fundamentals characteristic of econometrics are (1) identities or equations of definitions; (2) equations of institutional character; (3) technological equations and (4) behaviouristic individual equations. The first covers situations like saving and investment, the second, legal features like rent control, ceilings on prices, etc., the third, physical attributes of mechanical production, and the fourth, individual and firm's behaviour. With the aid of these structurals the degree of autonomy of 1, 2, 3 and 4 and the co-efficients of autonomy may be found out.

5.7. *Mathematical Economics*: R. G. D. Allen defines[33] it as the study of economic theory in mathematical terms. Contemporary as well as historical situations can be analysed. This technique is useful where a high degree of abstraction is necessary. For instance, the time element has two attributes, periodicity and continuity. In period analysis, successive periods are denoted by $t = 0, 1, 2, 3, \ldots\ldots t$ and the corresponding values of a variable, $p_0, p_1, p_2, p_3, \ldots . p_t$. This is looking forward from the initial period. The perspective can be reversed. If t is the current period, $(t—1)$, $t-2)$, $(t-3)$ . . . . are the successive previous periods.

33. Allen, R. G. D.: *Mathematical Economics.* (Macmillan & Co., Ltd., London, 1957), pp. 1-24, 371-395, 535-540.

Similarly prices would be (pt—1), (pt—2), (pt—3)... Po being the initial price. In continuous analysis, the time varies continuously, i.e., $P(t)$ for price at time $t(t \geqslant 0)$, with $P(0)$ as the initial value at $t = 0$. These ideas are basic to the study of dynamic situations. In another context mathematical economics proves indispensable. The real numbers measure only magnitudes. But in economics, the direction of movement and relative sequence order and position which a factor occupies in production over a period of time, are important features. Matrices and vector analysis, linear programming, and allied areas of mathematical economics are being cultivated, to pursue the intricate relationships. These and other farther reaches of the subject are likely to refine economic studies over space and time.

5.8. *Formal Logic and Institutions*: Certain precise tools and techniques referred to above can be employed most advantageously to carry out certain restricted studies. Fundamentals of any science can be comprehended only by logically sound and highly intuitive minds. These are faculties which depend more on the psychological make up and long training than on any simple course of studies and/or competency in handling tools. The need for synthetic approach, to which references have been made earlier, may again be stressed in this context.

6.0. Presentation of the Research Report:

6.1. *Marshalling of Evidence*: Pure objectivity and preparedness to follow the logical path are the attributes of a good scientific presentation. Pre-

determined attitudes of admiration or condemnation of what happened in the past are non-scholarly traits. Flights neither in the realms of philosophical nor in speculative thought is justifiable in economic studies, however much such a background would be desired. The tools and methods of study have to be used to avoid the pitfalls to which economic historians of the past were exposed. And in the interests of the advancement of learning in this sphere, one should indicate what in one's opinion are the merits of and demerits of the areas, materials, methods and presentation of the subject-matter. That would enable further explorations by scholars.

6.2. *Statement of Findings*: The findings would mean either approval or disapproval of the hypothesis. In either case, any effort that has been spared, for reasons within or beyond one's control, should be stated, so that there would still be a chance to test the findings. Further comparable data, which would set the findings in larger, international setting, should be provided by the researcher if he had knowledge of such data, as would not be easily available to those who would study the findings. The presentation of a research report is a distinct methodological and technical problem, which is outside the purview of this paper.

In this paper an attempt has been made to place economic history in its scientific setting, and to examine, the areas of research and the methods which could be employed to enquire into specific problems. The thesis is that, current economic theory and economic history may belong to different periods, but do not necessitate different methodological treatment.

METHODOLOGY OF RESEARCH IN LABOUR ECONOMICS

1.0. In this paper one of the important facts of Labour Economics is viewed from the methodological standpoint. Labour economics can be broadly categorised into (1) the study of normal features and (2) the study of abnormal features. It may also be analysed as (3) an assemblage of issues and (4) as a course of moving events. It is in respect of the latter classification that we can think of the anatomy of labour economics and the physiology of labour economics.[1] The abnormalities of relations between employers and employees like strikes constitute a state of disease in the normal employer-employee functional relationship. It is essentially a case of pathological study. Perhaps an inadequate awareness of the anatomy of labour economy is responsible for the wrong diagnosis under a pathological state. In this paper one of the pathological issues is studied. Economic ideas relating to a society in its state of normalcy, namely, the anatomical economic ideas may be found in a deteriorating condition.

1.1. *Nature of the Problem*: Strikes constitute a part of the study of the pathology of labour. There

1. HICKS, J. R.: *Social Framework*, Oxford, 1960, p. 224.

are two pathological strike trends. One of them leads the economy on the path of deterioration and decay. The other takes the economy along the route of progress and recovery. Both the trends are manifestations of industrial conflict, and are noticeable only at the bitter end of negotiations between the employers and employees. The success or failure is superficially indicated by the workers, by their jubilation over the gain in wage and related terms or by their failure to obtain any gain. This is a superficial approach. The real success of the worker consists in his securing a trend of continuous, and increasingly remunerative opportunities for training and work. The societal impact and the material economic growth effects of their claims have to be considered. A strike with a limited objective of securing a money increase in wages may be a success only in name and will not be enduring if in its wake retrenchment or a like measure of reduction in returns to Labour takes place. The emergence of freedom movements in agrarian economies has had as its aim the quest for the freedom from the wage systems imposed by the feudal lords. But soon man found himself in new large scale industrial societies where he was bound again by wage systems of factory lords. This new bondage is invisible but severe. In an environment of under-employment, this turn of events takes the economy on the downturn of production and fall in income. And since strike is an extreme step in industrial negotiations, many preliminary steps have to be taken before societal and economic justification for it is established. The claims of strike leaders and the counterclaims of employers may hide the real

economic issues of the nation. They may also overlook the counter claims of labour in many sectors which are comparable in labour conditions but not comparable in productivity or Trade union organization.

1.11. The term, strike appears to have emerged along with industrial revolution. This verb and noun has replaced the familiar term "Turn out". A strike is defined[2] as the cessation of work by a body of persons employed, acting in combination, or a concerted refusal or a refusal under a common understanding, of any number of persons employed to continue to work for an employer, in consequence of a dispute, done as a means of compelling their employer to accept or not to accept the terms or condition of/or affecting employment. This delimitation of its meaning precludes references to rent strikes, farmers' strikes, and debt strikes, as strikes in this exact sense. A strike must involve a group of employed persons with a definite

2. Industrial Dispute Act, 1947, (XIV of 1947) Chapter I, 1(q). *Industrial Dispute*: means any dispute or difference between employers and employees, between employers and workmen, or between workmen and workmen, which is connected with the employer or non-employer or to the terms of employment or to the conditions of labour or any factor.

LOCK OUT: Means the closing of a place of employment, or suspension of work, or the refusal by an employer to continue to employ any number of persons employed by him.

LAY OFF: Means (with its grammatical variations and cognate expressions) the failure, refusal or inability of an employer on account of shortage of coal, power or raw materials or the accumulations of stock or the breakdown of machinery or for any reason to give employment to a workman whose name is borne on the muster of rolls of his industrial establishment and who has not been retrenched. (*Ibid*, Chap. I, 1(kkk)).

"disputable" employer-employee relationship.[3] Workers strike against both employer and the union leadership. The latter is infrequent and therefore, not considered in this paper.

2.0. *Hypothesis Setting*: The methodological problem is that of setting hypothesis, which when tested would reveal the essential causes of enduring success of strikes. A successful strike is one which is based on secure economic ground, knowingly or unknowingly. Social especially political aids offer only initial momentum. What sustains the strike leaders is their organizational strength supported by a valid economic cause. In the tests of cause-effects, hypotheses have but one aim. It is the formulation of generalisations of labour economics. The technique of R. A. Fisher is to pose null hypothesis and to see if it is rejected. It is logical to expect the disapproval of a cause-effect relationship as one with greater force of finality, than the approval of a cause effect relationship. Where the forces at work are numerous it clarifies our understanding, whenever the importance attached to a cause of an event is disapproved. We may start with a battery of hypotheses relating to the notion that the societal influence is not the cause of a strike. These are distinct from the purely economic cause, whether it is employee-motivated or employer-motivated. The nullification of each hypothesis leads us to

3. KNOWLES, K. G. J. C.: *Strikes*—A Study in industrial conflicts with special reference to British experience between 1911 and 1947 (Oxford—Basil Blackwell, 1954) pages 90-98. This book is a monograph published by the Oxford Institute of Statistics and it presents a searching analysis of literary and statistical materials.

choose another possible hypothesis. The next hypothesis can be restricted in scope, and nearer truth. For a test within the realm of economic hypothesis, we may state for instance, that the cause of a strike is that the employers are not responsive to the changing claims of labour market to the same extent to which they are responsive to the forces of the commodity-market. Should this hypothesis turn out to be true, one is then lead to analyse how far employers are (1) *Unwilling* to meet the needs of labour and (2) *unable* to concede the claims of labour. Here the effects of changes in the cost of production and the costs of competition on the claims for addition to labour income may be assessed.

3.1. We can have hypothesis from the viewpoints of the society and the employer. The hypothesis from the employees standpoint can be that there is the concealed income of the worker, which is denied to him and hence he joins a strike. This is in Marxian tradition. When employer's problems are considered, numerous controversies regarding the assumptions of our analysis do not arise. In a free society employees assume perfect or monopolistic competition and set profits as their goal. They have reserve power and they can wait. The workers' claim on the national product is based on an irreducible minimum level of subsistence and they do not brook the marginal productivity criterion when wages fall below this level. And beyond a level, it is likely that workers either wish to capture the external economies to the utmost by claiming a major share in additional revenue of a firm or wish to abstract rental and interest accruals of the firm so as

to enlarge the claim on the score of individual labour productivity. The continuation of the analyses of strikes by stages of hypotheses from the employee and employer angle leads us from the general to the more specific economic relationships.

4.0. *Social Influences*: Apart from wage and related claims—the social mores, the pressure groups of politicians, the value-patterns of the people bring about industrial disputes. Hereunder a few influences which are close to economic causes, but are not purely economic like the trade union movement, governmental activity and economic regionalism are considered. The goals in industrial relations are obviously many—the viability and development of the society, the economy as a whole and the enterprise.[4]

4.1. *The Trade Union Movement*: The ideals of socialism which were slowly crystalised during the last century, have provided the social basis of strikes. In the last few decades the socio-political outlook in the growth of Trade Union movement is perceptible. Till about the emergence of Fabians of England, the movement was non-political and later, the British Labour Party was developed as the off-shoot of Trade Union movement. The syndicalist and the Nazi movements of Italy and Germany were built on the promise of a new form of socio-political organisation. Strikes were organised as parts of such a movement which became, as Alfred Marshall anticipated many years before in

4. Heron, Alexander, R.: *Reasonable Goals in Industrial Relations* (Stanford University Press, California), p. 117. This scientifically written book is broad based in its sweep and still penetrating in its analysis.

his "Economics of Industry" (1927) mere incidents in a campaign. The events which follow a strike are often tied up to new fangled causes. The trade unions follow the strategy of timing their strikes to conform to favourable socio-political conditions. In Socialist countries the leaders have, like Lenin, disapproved "economism" or the pursuit of economic ends without reference to politics. The syndicalists thought of strikes of less than three days, short enough to conduct without strike-pay, and frequent and big enough to paralyse the economy. In the United States of America, the motivation was purely economic. The strikes in 1946 originated in oil-refining where the profit level was high and it spread to other steel, and machine making industries.

4.11. The trade unions exercise the power which arises from the refusal to work. In practice the trade union militancy is the measure of the internal strength of the union itself, the growth of Unions of employers, and the changing role of the State. The composition of a Trade Union can be given in terms of professional workers, wage rates, and the rural and urban origin ratio of members. The strength of the Trade Union can be measured in terms of funds available and the composition of outlay. In the early years when Trade Unions had negligible funds, concessions were obtained from the employers without resorting to strike. In recent years the Trade Unions have collected funds not only for organising and withstanding strikes but also for social service, for internal administration, and political activities. The unemployment benefit is given by governments in many countries but the origin of this

is in the Trade Union movement. The increase in administrative expenditure of Trade Unions can be measured along two lines; one, increase due to increase in the membership; two, increase due to new functions of the Trade Unions. The main item of outlay, is the disbursement of strike pay. And recently there is a tendency of growing officialdom. The trade union official has developed the outlook of a civil servant of a powerful hierarchy. When the membership is enormous and the executive committee of which he is the chief spokesman makes it difficult to insist on frequent consultations, Trade Union Official becomes powerful. But there is nothing to fear it. There is no need to avert it. As Beatrice and Sidney Webb have long back suggested in "Industrial Democracy" (1926) like a legal or a medical professional man, the Trade Union official can with equal appropriateness be of a professional type.

4.12. The efficiency of administration would rest on the number of Trade Unions, which because of competition between them can let down the proper enforcement of the claims of labour. In the absence of such restrictions the long processes of the trial of strength eliminate the weak. Strikes organised by Trade Unions are based mainly on the scope for enforcement. During war strikes are banned. This conflict between the Trade Union and the State gives a new dimension to the problem.

4.2. *Governmental Activity*: In spite of war period restrictions in Britain during the five years commencing from 1940 the number of strikes increased from 922 to 1251, 1303, 1785, and to 2194 respectively.

Of these strikes, nearly 25% were those arising in metal and engineering industries. Hence, if there is the strength to bargain, a war period is not exempt from strikes. During the immediate post-independence period the number of mandays lost in India was 6.6 million in 1949 and 12.8 million in 1950. Thereafter reasonableness on both sides of bargaining table seems to have prevailed and the mandays lost in 1954 were reduced to 3.4 million and to 6.4 in 1957.[5]

4.21. Though these figures are high in absolute terms of developing economy, in comparison to France and Italy the days lost are of a lower order in India. The number of workers involved are fewer. It is on account of prolonged strikes of a limited number of workers that we have the high absolute figures for India. The welfare-conception of the State has protected these strike-classes.

4.22. The state is essentially what the communities make out of them. In recent years the state has emerged as the benefit-conferring agency. The provision of unemployment insurance, the fixation of minimum wages, the enforcement of arbitration between the employer and the employee and the tendency of the state to function as the model employer are the features of modern governments. In democratic countries there has been the ideological disapproval of strike even in nationalised enterprises. The labour theorists of Britain point out that in due course such strikes

5. "Incidence of Industrial Disputes by Industry", *International Labour Review* (Geneva, Vol. LXXVII, September 1956, pp. 290 to 302).

would become almost entirely theoretical. It is not the case in India. In U.S.S.R. the need to avoid strike arose out of the ideological basis that the strike is a weapon of attack against capitalists, and hence it becomes a form of betrayal against the workers if in government socialist enterprises a strike is organised. Yet the recent outlook in democracies is to strengthen the political wings of the trade union movement in State enterprises. Nearly 60% of trade union members in England are contributors to the political fund. When funds are used to conduct a general strike the workers in nationalised enterprise organise a sympathetic strike. The laws of the land have to recognise the most universally felt claims of the community. Hence the laws change with change in *defacto* labour conditions.

4.3. *Economic Regionalism*: The growth of national strike activities initiates special regional propensities to organise strikes. Attempts can be made to formulate the basis of regional differences. Conditions studied in the Oxford Report cited earlier indicate that the regions of Britain, South Wales, and Northumberland and Durham area, are illustrative of regional differences. Each has a comparable proportion of industrial workers. But there are regional contrasts in inter-occupational working conditions. The industrial structure, sociological factors and the history of Trade Unionism in each region account for the differences. The tools of measurement of these differences are mentioned elsewhere in this paper. Regionalism is a complex of political, cultural, geographic and economic urges of the people. Vast

continental economies, like that of India, U.S.A., and U.S.S.R. present regional problems, which cannot be overlooked. The study of regionalism from the standpoint of labour economies is in its infancy. In respect of location of industries, the approach is far too capital-centred or in many cases the approach is purely economic. The regional approach has to be many sided.

5.0. *Tools of Analysis*: The distinction between the societal and other economic causes, enables us to use the tools of economic analysis in the study of strikes in respect of the latter category of causes. In an economy how the strikes are equally linked to trade cycles can be analysed. The overall economy and its cyclical trends are also related to individual disputes. This is a study that can utilise the tools of trade cycle analysis. A measurement of the Union's bargaining power can be attempted and as between industries there are variations in the volume of strike force. These differences are related to real wage differentials. The regional variations in an economy can be analysed and an index of strike-proneness can be given. The causes of industrial unrest like fatigue, frustration and inferiority complex can also be quantified with the aid of psychometric functions. But it is to be borne in mind that the main fault of a pure economic calculation is that it does not go far enough.[6]

5.1. *An equation of Strike*: A strike is occasioned by the actions and reactions of the contracting par-

6. BLOOM, G. F. and NORTHRUP, H. R.: *Economics of Labour Relations*, (Richard D. Irwin, Homewood, Illinois, 1958), p. 229.

ties, namely labour and management. The labour desires as much leisure as it can possibly secure consistent with the amount of pay or salary which labour requires to maintain a given or desired standard of living. Thus the strike phenomenon can be abstracted as a relationship of propensities for leisure on the part of labour and propensity for lower cost on the part of management.

The equation for Strike can be given along these lines:

$S = (L_l + M_w) - (M_{pr} + L_p)$ where

S = Strike, L = Labour propensity for leisure.

M_w = Management propensity for the work of labour,

M_{pr} = Management propensity to reduce pay,

L_p = Labour propensity for pay.

5.2. *Bargaining Power of Trade Unions*: Under conditions of negotiations between labour and employer, one of the parties has usually an upper hand at a given time on account of a variety of influences. The question whether one of them should agree or disagree to accept the terms tabled by the other would arise. Paul Sultan's[7] assessment and measure of these forces of settlement can be employed to find a set of relationships.

a = Union cost of agreeing,

b = Union cost of disagreeing,

c = Company cost of agreeing,

d = Company cost of disagreeing.

7. Sultan, Paul: *Labour Economics*, (Henry Holt & Co., New York, 1957), p. 303.

$$a/b = \frac{\text{Union cost of agreeing}}{\text{Union cost of disagreeing}}$$ — If the ratio is high the Union has maximum bargaining power.

$$c/d = \frac{\text{Company cost of agreeing}}{\text{Company cost of disagreeing}}$$ — If it is a low ratio the Union has maximum bargaining power.

$$a/c = \frac{\text{Union cost of agreeing}}{\text{Company cost of agreeing}}$$ — A high ratio to this provides maximum bargaining power for the Union.

$$\frac{a/b = \text{Union cost of agreeing/Union cost of disagreeing}}{c/d = \text{Company cost of agreeing/Company cost of disagreeing}}$$

i.e. High ratio of this provides maximum bargaining power to the Union.

5.3. *Trade Cycles*: A Time-Series of strikes, giving the workers involved, and workdays lost, can be constructed. Among the variables, number of workers, workdays lost and number of strikes, the trade cycle is highly sensitive to the number of strikes. The components of the strike chart are frequency, magnitude and duration. Because, during the last one and a half decades 1945-60 efforts were made successfully to even out the cyclical effects, and hence the strikes are of short-duration but frequent, as is characteristic of growth during normalcy.

5.31. *The Calculation of Average duration of disputes*: The average duration of disputes is a weighted average for duration of individual disputes, each of these durations having a weightage proportionate to the number of workers involved in the dispute.

No. of days lost in a strike = No. of workmen days

$$\text{Average duration} = \frac{\text{Total No. of days lost (in an industrial country)}}{\text{No of workmen involved (in a country)}}$$

If W_1, W_2, ... W_n are the number of workers involved in disputes 1, 2, 3, ... n and infinite, and d_1, d_2,............d_n are the respective durations of the disputes (expressed in days) the number of man-days lost m_1, m_2, ... m_n is:

$$m_1 = d_1W_1,\ m_2 = d_2W_2,\ \ldots\ldots\ m_n = d_nW_n$$

The average duration D defined above is therefore equal to

$$D = \frac{m_1 + m_2 + m_3 \ldots\ldots + m_n}{W_1 + W_2 + W_3 \ldots\ldots\ldots + W_n} = \frac{M}{W}$$

$$D = \frac{d_1W_1 + d_2W_2 + \ldots\ldots\ldots\ d_nW_n}{W_1 + W_2 + \ldots\ldots\ldots\ldots\ W_n}$$

that is the weighted average of the individual durations, the weights being the number of workers involved in each dispute.

AVERAGE DURATION THUS CALCULATED FOR:

U.S.A. for the period 1937 to 1957 is 15.1 days
India for the period 1948 to 1957 is 8 days
Australia for the period 1937 to 1956 is 4 days
U.K. for the period 1937 to 1956 is 4 days.

The average for twentyeight countries covered by the International Labour Office is between 5 and 9 days.[8]

5.4. *Inter-industrial variations*: The number of workers in employment, can be related to persons on strike, workdays lost and output. The age of the industry, its plane of expansion, the flow of technical

8. "Incidence and Duration of Industrial Disputes", *International Labour Review*, Geneva, Vol. LXXVII, No. 5, May, 1958, p. 461.

change, the size of firms, their efficiency, the level of earnings, and the seasonality of the given industry are indicators of inter-industry variations. In Britain the mining and textile workers are the most hit because of the location of the former industry and elastic demand in the latter industry. In steel plants, strikes have become frequent in recent years in view of the high level of productivity and the consequent bargaining power of the workers. In the new steel plants under construction in India there have been strikes. In the Indian Steel mills productivity is not always the index of strike proneness. It is good that it is not so. Otherwise Tata's who have maintained international standard of efficiency would have been perpetually faced with strikes. So would the Port Trust of Madras wherein the labour productivity is the highest for the ports of comparable intensity. A recent study of Tata Steel strike carried out for Massachusetts Institute of Technology, Cambridge, indicated the free play of a variety of motives, sociological, managerial and pure economic.[9] The International Labour Office study of industrial disputes activity-wise has shown that in the twentyeight countries covered by them, managerial activity accounted for 35 million workdays lost per year of 60 million workdays to all activities per year during 1949-1959. The least in the order of importance is Transport, Communications with about 3 million workdays lost.[10]

9 KANNAPPAN, Subbiah: Tata Steel Strike (*Journal of Political Economy*, October 1959, Vol. LXVII, No. 5, pp. 489-507).

10. Incidence and Duration of Industrial Disputes (*International Labour Review*, Vol. LXXVII, No. 5, May 1958, p. 468).

5.5. *Regional Variations*: The percentage of workers in each region is divided by the percentage of industrial population in their region, to get a ratio which can be compared. Labour Office Unit is to be the figure for the nation as a whole, namely 100 per cent of the strikers and 100 per cent of the Industrial population. This indicates the regional involvements in strikes. Each of the major industries can be analysed in terms of this regional strike proneness. The regional and industrial influences can be distinguished by standardizing the "strike proneness ratio" denoting,

S = all strikers in the nation
δ = all strikers in a particular region
s = all strikers in a particular industry
π = all workers in a particular region
R = in a given region
I = in a given industry

$$\Sigma \text{ (By Regions)} = \left\{ \frac{s}{S} \left(\frac{sR}{S} \div \frac{pR}{p} \right) \right\}$$

$$\Sigma \text{ (By Industries)} = \left\{ \frac{\delta}{S} \left(\frac{\delta I}{\delta} \div \frac{\pi I}{\pi} \right) \right\}$$

The standardised *Regional* strike proneness ratio is used as a weight share of the various regions in the total striking. In the man power planning it is now being recognised that regional balance in the supply of and demand for labour is essential.

5.6. *Women Workers*: What with the increasing employment of women in factories it is worthwhile to consider the proportion of men and women in the workforce of an industry and to relate the ratio to the num-

ber of strikes. Whereas empirical evidence is inadequate in this respect there are competent writers like Barbara Drake who in her book "Women in Trade Unions (1921) pointed out that women "down tools" for frivolous reasons and often drag men after them. In the view of the author of the paper it is too early for India to throw open the floodgates of additional but presently latent labour force of women. The surplus of unemployed men have to be provided with job opportunities before complicating the demand side for new jobs by dragging women workers out of their domestic chores. It is far more easy to shatter their existing values of work and happiness, than it is to improve upon it or even replace it. It is necessary to employ psychometric measures of disutility or benefits of employment of women.

6.0. *Conclusion*: In this paper a few societal and pure economic attributes of the phenomena of strike have been considered from the methodological standpoint. Real research consists in tool-making, if scientists are a real match for it. It is doubtful if under the pressure of solving day to day problems of exigency, men in charge of policy making can be tool makers, except accidentally. It is certainly open to question whether they have time enough to conduct elaborate research to solve the problem on hand. But surely scholars, untrammelled by daily cares of producing quick solutions can take to the unostentatious calling of finding out methodological refinements, which are capable of infinite use.

PREPARATION OF A RESEARCH REPORT*

1.0. *Definition*: A research report is the product of one's study which has reached a definite stage, if not, the stage of completion. At different points of time tentative conclusions can be reported to secure competent discussion of the findings. The availability of time, funds, development of skill, or other facilities will be conducive to reach higher stages of research, at which additional research reports can be prepared.

2.0. STAGES

2.0. *Stages of preparing a research report*: In these stages the materials of the report are mastered, their details are checked and made relevant and comprehensive. If the report is in respect of problem solving research the following questions, who will read it?, why does he want it?, how will he use it?, may have to be posed and answered. If the research work is of fundamental nature these questions cannot be easily answered. Then the report is addressed to a large and uncertain *coterie* of the seekers of truth, in the near or distant future. In these stages thesis sentences may be written as working devices.

* The references to materials cited in this paper are given in an alphabetical sequence at the end to illustrate one of the methods of scientific documentation. This method need not be adopted in all scientific papers unless repetitive references are given to the same source.

2.1. *The Stage of Preliminary outline*: Here a few fundamental questions pertaining to the subject are raised. The sketching of a tentative outline is facilitated by the formation of slugs at the top of each note, taken from available material on the subject. The caption is called a slug, and it should be brief and exact. The use of cards for taking down notes is recommended with a view to sort out materials quickly and methodically. The prohibitive cost of cards may lead the researcher to use sheets of paper. Slugs can be arranged sub-topic-wise and kept in bundles till the stage of preliminary draft is completed.

2.2. *A rough draft*: The writing of a rough draft falls into two main types of activity viz., the expansion and consolidation of the materials and the revision of the entire script. Often it is the abundance of the material rather than the inadequacy of it that confronts the research worker. A certain amount of affection or irrational preference for materials gathered by him is likely to overwhelm the author. An attempt should be made to chop off the outer shell of ideas, to eliminate words and phrases which have more literary flavour than relevance to the theme under discussion. Where drastic elimination of the materials collected has been made it is helpful to note down the references to the reading card, which may have to be traced out during subsequent revisions.

2.3. *A period of revision*: After completing the draft it may be laid aside for a short time, and then it may be treated as though it is the work of another person and criticised. An examination in respect of balance, structure, arrangement, the assessment of facts

and data should be made during this stage. An evaluation table given as an Appendix to this paper may be used to satisfy oneself as to the ranking of the report.

3.0. Nature of Reports in Pure Sciences and Social Sciences

The subject matter of study in pure sciences is natural phenomena, whose actions and reactions are of universal character. In social sciences, the same problem has a different significance on account of change in environment or behavioural reactions of human personalities and institutions. Notwithstanding this difference in materials for research, the technical character of reporting is the same in both sciences. The report aims at objectivity, follow up of earlier findings and at informing the select body of fellow research workers in language and terminology which they understand.

4.0. Features of an Economic Report:

Each social science has its level of abstraction and scientific attainments. Among the social sciences, economics has made claims to a high level of scientific reasoning. Abstraction of types of behaviour of functions like price and income, assumption of homogeneity of commodities and of continuity of events have added to the exactitude of this science. The use of statistics and mathematics has sharpened the conceptual tools. The logical processes of deduction and induction have supported economic formulae and models. Of equal importance is the interaction of economic and political theories. The changing concept of the State and the reforms of personal and constitutional law leave their

impress on economic institutions. The variety of tools available and the evolution of methods and scope of economics have lightened the task and added to the usefulness of the research reports.

4.1. *Types of Economic Studies*: Economists evaluate and reformulate the different types of theories in their reports. Important among them are: total vs. partial, static vs. dynamic, and shortrun vs. longrun, models vs. assumptions, and central theories vs. branch theories. ((18)) Of these many approaches, a selective use of a few, if not any one of them, is sufficient to present a research report. Institutional research by teams of workers permits a many faceted and comprehensive approach to a given problem. The formulation of the theories of games and economic behaviour by J. Von Newmann and Oskar Morgenstern has opened new areas. ((12))

5.0. The Stage of Preparing the Final Draft:

The report takes full shape at this stage. The issues of form and matter are raised and solved in this stage, subject to a further and final revision. The use of technical aids for editing the materials takes place in this stage.

5.1. *Editing the material*: The best rule here is to omit all the raw data that can possibly be spared. This is not easy. The affection for all the facts which the researcher has so laboriously gathered cannot be easily given up. It is natural for one to covet appreciation for the extent of his industry. ((3)) These are mental attitudes that must be overcome in the process

of developing a research personality. If the excision of the excess material gathered is rare and is inaccessible to many readers the place for such material would be the Appendix and not the body of the research report unless its presentation in the body is indispensable to maintain a thread of analysis.

5.2. *Technical Aids*: In physical sciences, especially in engineering, the wide use of analyses, calculations, maps, graphs, diagrams, and other illustrative material is possible. To a lesser extent this can be done in social sciences. Unnecessary drawings or calculations or presentations of raw data, instead of extracts or final results of calculations, should not be allowed to clutter the manuscript. A reviewer of a research report is too well trained to be told that an enormous volume of work and data are behind the precise conclusions arrived at. In social science tabulation of data is relatively more difficult. Nevertheless statistical, econometric and mathematical analyses of certain types of economic and social data have become acceptable technical aids to research.

6.0. MATTERS OF FORM:

Apart from the choice and arrangement of matter of the research report certain aspects of form may have to be considered. The sequence of ideas can be finalised in the tradition of early English authors of the reports of United Kingdom and its Royal Commissions. It is said of them, and of J. S. Mill and his father in particular, that before finishing for the press their reports, they wrote "Marginal contents", namely, a short abstract of every paragrah in order to improve the order of ideas.

A few of these aspects have been discussed in the foregoing account.

6.1. *The style of a Scientific Paper*: The main aim of the thesis writer is accuracy. Nothing is more important to him than the devoted service of truth. With this end in view he will pursue every aspect of his research, avoid uneven emphasis, expose the weakness of his own stand with the same zeal with which he demonstrates his strength. In presenting the research paper he has two guiding notions: 1. to tell the whole truth, 2. to capture the attention of the reader in respect of the whole truth which he is seeking to reveal. Intelligent selection of words, discrimination in paragraphing, the careful use of punctuation and observance of the rules of composition, are essential in respect of style. A finished report should provide smooth reading and attempt to project ideas in an orderly sequence. "To do no more than present all that data and state its conclusions" is to shirk the responsibility of a research reporter. ((3)) The important task is to finalise the report which should incorporate all evidence of significance without embodying dull masses of individually interesting facts.

6.12. *A Caution*: Fine writing for its own sake should be avoided; yet felicity of expression is often the by-product of the best efforts at scientific writing. ((7)) ((6)) The use of Latin or other foreign words may be desirable occasionally to secure the fullest expression but indulgence in their use will give the appearance of pomposity. A departure from this norm may lead to the amusement of the readers but certainly does not enhance their estimation of the author.

6.2. *Language*: The draft should be read with a critical eye for grammar and composition. Certain linguistic flaws are likely to effect the meaning and expression of ideas. Sentences have to be exact and unambiguous. ((6)) The use of punctuation saves long sentences from uncertain/ambiguous expression. Brief and crisp sentences convey the meaning directly and forcibly. The introduction of phrases may add to literary flavour but has the danger of distorting ideas. Many phrases and idioms have ephemeral connotations. The use of quotations should be such that the general flow of ideas is not affected. It is said "the best way to detect deficiencies in style is to read aloud for rhythm and cadence." ((3)) What is even more important is to see that the prominence given to the technique does not bypass the main purpose of a research report, viz., that of exact scientific expression. Though men of letters have contributed to the growth of ideas, the stylists have always set store by the felicity of expression rather than by the formation of ideas.

6.3. *Footnotes*: This technique serves the interests of brevity and smoothness of the research report. Still the footnotes can become a problem for the author and the reader. They are present in every scholarly piece of work and their over-generous use is certainly irritating. Their employment cannot be a substitute for real scholarship. The footnotes have five chief functions:

i. To present the source of evidence.

ii. To establish the validity of evidence.

iii. To acknowledge indebtedness.

iv. To elaborate the textual materials to a point not permissible in the main body of the report.

v. To provide cross references to the various parts of the thesis or composition in which the footnotes appear.

The rules pertaining to a systematic use of footnotes is given in Appendix I to the paper. They seek to ensure the fulfilment of the aforesaid functions.

6.4. *Quotations*: The profuse use of quotations from other authors has to be avoided. But when the words of others are paraphrased, wherever acknowledgement is due, it should be given. The wordings of laws, regulations and official rulings should invariably be quoted. The legal implications of quoting lengthy pieces from copyright materials should be realised. In respect of most books there are restrictions upon the lengthy reprints of extracts from their contents and it is necessary to secure express permission from the publishers concerned before sending the manuscript for print. Where copyright materials are used it should be remembered that it is not enough to give a footnote acknowledgment to absolve oneself of the responsibility to obtain the publisher's permission.

7.0. THE FINAL TASK:

This relates to the title, the contents, the preface, the introduction, the synopsis, the body, the appendices and the bibliography. The typing and passing of proofs through the press require training on the part of the author, though often, it can be shared with the publisher. The author's knowledge of the layout is indis-

pensable to make a clear job of the preparation of the research report for publication.

7.1. *The title page*: It forms the first contact of the reader with the report. It indicates the subject matter. The effectiveness of the title is supported by details like the name of the writer, the name of the individual or organisation for whom the report is made, the date and other information. The title should be appropriate enough to catch the eye of those who are in search of the contents. It means that the title should faithfully indicate the central theme of the report. The development of institutional research has been rapid in recent years. The names of the chief organisers or the sponsors of the research is mentioned in the title page. This fosters the spirit of team work and eliminates the egoistic quest for publicity by individual research workers. The best known examples of such reports are those prepared by the National Institute of Economic Research, United Kingdom, The Economist, London, and the National Bureau of Economic Research, New York, and the National Council of Applied Economic Research of India, New Delhi. The recent report of the Techno-Economic Survey of Madras may be cited as its latest team report. ((1)) Hence the credit is given to the entire team of research workers whose names find place in an appendix. However much one or a few individuals may be responsible for making cardinal decisions in the conduct of the research, it promotes institutional interest to give credit to the team as a whole. It is also a recognition of the fact that research on such a large scale cannot be undertaken and completed by an indi-

vidual. The leader of the team or the head of the institution is entitled to credit for the organisation of research.

7.2. *Contents*: This gives at a glance the design of a report and the logical order of the arrangement of materials of the report. In short-form reports a table of contents may not be necessary. In long-form reports the table of contents may have to be elaborate in its incorporation of sub-heads and sub-sections. The technique of certain legal and economic research reports is to incorporate leading clauses and sentences as part of the table of contents.

7.3. *Preface and/or foreword*: Preface to a report bristles with issues of omission and inclusion. To a research report an introduction serves the main purpose of establishing the early contacts with the mind of the reader of the report. Hence, the preface appears unnecessary if there is an introduction to the subject. A foreword which embodies the words of one's patron or the scholarly commendation of the theme of the report to the readers, may not seem as unimportant as a preface. It is left to the research worker's judgement and choice.

7.31. *A Contention*: The extenuating reasons for including a foreword in a research report are partly objective. They are a concession to subjective preferences of the author and his environment. But a preface becomes a redundant appendage to a research report, especially if it takes the place of an acknowledgment. The catalogue of many names of those consulted may, if need be, find a place in the appendix. The

references to the names of casual consultants, typists, librarians, other assistants and even relatives, has become a matter for inclusion merely out of scholarly limitation. The justification to reward them is unquestionable. But does the mention of their names in a preface help them or the readers? It may be a source of embarrassment to them.

7.32. *A Critique*: A constant conundrum, mainly in American reports appear to be the reference in solemn tones to one's wife by way of acknowledgement of help rendered. Stuart Chase, ((1)) otherwise a prudent critic of the "Tyranny of Words" is himself guilty of this superfluity. In contrast, the British and Continental writers, have a strict view of acknowledgement. They take for granted the implied help from the members of one's family and office, which is only too well known to any reader. If acknowledgements are extended on the present American practice, they may well end up in thanking the fingers for holding the pen, and the paper and ink for recording ideas in black and white. The readers then would like to be thanked for perusing the report. The only thankless job would be that of the author himself. Where acknowledgements are due, and cannot be withheld, a matter of fact reference to names in an alphabetical list under the heading is commendable. The author has freedom to dedicate his report to those near and dear to him, but cannot drag the names into the preface. In the writings in the research treatises of British economists, Mr. Hicks or Mr. E. A. G. Robinson, there are seldom any references to either Mrs. Hicks or Mrs. Robinson, even though the latter two are economists in their own right, and are

competent to aid the authors. This is a good usage of preface.

7.4. *Introduction*: It is meant to prepare the reader to follow the subject matter of the report. It has to convey the nature of the subject, the purpose of the research, the plan of analysis and the omissions or disclaimers with which the reader has to be forewarned. In the research reports of the early decades of this century, the problems of definition and methodology have been discussed under introduction. The recent tendency is to elaborate these discussions in early chapters of the report, which closely follow the introduction.

7.5. *Synopsis*: In pure Sciences, a brief synopsis or abstract of the entire report is given at the beginning of the report. In certain reports, the synopsis is given at the end of the report. The behavioural studies do not easily lend themselves to oversimplification. Hence many reports pertaining to social sciences have to ignore this feature. This omission detracts from the Scientific character of economic reporting. But when the introduction is comprehensive, the omission is compensated. It is difficult to attempt a synopsis in social sciences compared to physical sciences. The reasons are that 1. the reports in social sciences are of considerable length, 2. they involve close reasoning and 3. that there are many qualifications for each statement. For these same reasons it may be argued that a synopsis is necessary. When reports are short, synopsis become superfluous. For the sake of variety and without other justification, certain cliches and journalistic titles are given to the synopsis part of the report. ((7))

This is not in keeping with the technical character of the report.

7.6. *Body*: It should redeem the promises made in the introduction. It should incorporate analytical charts, tables, diagrams and drawings almost to the barest minimum. The main part of the body of the report can be subdivided and sequentially arranged. At the rough draft stage this takes full shape. The core of the subject matter of the report constitutes the body.

7.7. *Concluding Section*: The general comments pertaining to the significance of a piece of research as one understands it, and the location of the research work in the general body of knowledge should be attempted in the terminal section. It opens new vistas of study for the readers.

7.8. *Appendix*: It is prepared with a view to avoid congestion of details and data, from the main body of the report. It provides supplementary materials, computations and rare extracts for the purpose of reference. An appendix is not necessary in a brief report. In reports which have had as one of the aims, the collection of rare data, the appendix may exceed in bulk the main report. It is difficult to lay down maxims for an ideal appendix except to say that all materials relevant to the report but of a character which hinders the smooth flow of the main theme should be deposited in the appendix.

7.9. *Bibliography*: Bibliography incorporates the literature referred to and actually utilised in the preparation of the report. The bibliography need not refer to all books published on the subject. The attempt to exhaust the list of published works on a given

subject is the work of a librarian or a bibliographer. The research worker should not get himself lost in the job of a bibliographer. In presenting a bibliography, the alphabetisation of the books and other materials consulted has been in practice for long. It is permissible to rank the books and publications in the order of importance as experienced by the research worker, and to number them accordingly. Bibliography can be made to serve the purpose of reference-indices in the body of the text as well as a list of materials consulted. In certain types of research work the time sequence of publications is important. In such contexts, the arrangement of bibliography is chronological in order, mentioning first the date or year, then the author and other details. The broad purpose of a bibliography is to provide the reader with a fair chance to estimate the thoroughness and scholarliness of the report.

8.0. *Self-Evaluation*: Certain basic principles in terms of function and procedures in writing the technical report may be applied to a given piece of work to know the extent to which the report conforms to high standards.

8.1. *The first is a functional test*: Each part of the report has a definite purpose which should be fulfilled. These purposes have been discussed in the foregoing sections.

8.2. *An overall test*: So as to satisfy oneself as to the adequacy of the general treatment of the subject, the questions that have to be pertinently answered within oneself are:

(a) What is the main idea?

(b) Do the discussions and citations in the body of the report sufficiently cover the main idea?

(c) Is the attitude objective?

(d) Will the reader be convinced of the logical attributes of conclusions?

and (e) Does the objective appear to be objective?

An appendix is added to this paper, which gives a table for self-evaluation. These questions have to be posed and answered by the author himself. A controversial question expressed in this regard is that the author should ask himself another question "Have you led him (reader) to take an attitude to the subject?" ((3)) This question appears a little out of context: firstly, it is not the aim of the author of the research report to persuade or convert his would-be readers to take his attitude. The facts presented by him may lead those of different value-judgements or purposes of enquiry to take different attitudes. The researcher is not interested in attitudes and opinions, rather he is concerned with the collection of facts and formulation of concepts beyond the reach of controversy.

9.0. *Types of Reports*: Research studies are basically of two types: 1. fundamental or pure and 2. applied or problem solving. Research report in its strict sense relates only to fundamental studies. Governmental administration or business activities call forth the preparation of reports on current problems. The work is of an applied type, and can be strictly called only technical-reporting, and not research-reporting. A

research report incorporates technical features, but all those incorporating technical features are not research reports. The latter are by nature few, original and employ similar methods of presentation in both natural and social sciences. They provide the tools to other tool users, who are authors of technical reports.

EVALUATION TABLE

A TABULAR EVALUATION OF A RESEARCH REPORT. ((9))

This table can be used to rate the performance of an author. The activities are identified as stages M and/or N.

M = Before the preparation of a research report.
N = During the preparation of a research report.
Title of the Report: Ref.:
Name of the Research worker:
Grade No.—

Score Key: 1. Satisfactory
2. Fair
3. Good
4. Excellent.

No.	Code	Activity	Score				Rank
			1	2	3	4	
1.0	MN	*Grasp of the subject:*					
1.1	MN	Overall grasp of the problem					
1.2	MN	Precision of the theme					

No.	Code	Activity	Score 1	Score 2	Score 3	Score 4	Rank
1.3	N	Correctness of the title					
1.4	N	Organisation of the materials					
2.0	MN	*Research materials:*					
2.1	MN	Quantity					
2.2	MN	Quality					
2.3	MN	Source					
2.4	N	Assessment					
3.0	MN	*Assessment of the material:*					
3.1	MN	Clarity					
3.2	MN	Originality					
3.3	M	Balance in approach					
3.4	M	Application of data					
3.5	M	Bridging gaps in factual data					
3.6	M	Extrapolation					
4.0	N	*Adaptation of the material:*					
4.1	N	Reference					
4.2	N	Quotation					
4.3	N	Paraphrase					
4.4	N	Partial modification					
5.0	N	*Forms of presentation:*					
5.1	N	Writing and para-graphing					
5.2	N	Logical development of sections					

No.	Code	Activity	Score 1	2	3	4	Rank
5.3	N	Composition of transitional sections					
5.4	N	Structure of sentences					
5.5	N	Punctuation					
5.6	N	Use of idiom					
5.7	M	Uniformity of spelling and diction					
5.8	N	Observance of the rules of footnotes					
5.9	N	Observance of the quotations					
6.0	N	*Final tasks*:					
6.1	N	Bibliography					
6.2	N	Layout					
6.3	N	Correctness in the Press					
7.0	MN	*General:*					
7.1	MN	Significance of the piece research					
7.2	N	Location in the body of knowledge					

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THE PLACE OF THEORY IN ECONOMIC RESEARCH

1.0. The Background of Inquiry

1.1. *Origin of Economic Theory*: Economic theory from the West European standpoint is about 200 years of age. The practice of oriental agricultural societies which have had an earlier start in contrast to European agriculture did provide opportunities to develop economic theory. Nevertheless not before modernisation of production, the development of commerce and the concentration of operation in urban areas has economic science advanced in terms of theory. When the static agricultural societies of the past gave place to the commercial, industrial and more recently the leisure class of societies, the importance of theory came to be understood. Material success or failure of nations often precedes the rationalisation of human conduct in terms of economic theory. The merit of Ricardian contribution or that of Malthus stems mainly from the deep knowledge of events which they perceived and relative merits of events which have occurred. The university tradition of teaching economics for a long time has been to view economics to begin with as a part of philosophy. That was the position during the days of Adam Smith. Subsequently as a part of political science, upto this day the chair in the Cambridge University is known by the term 'Political Economy'. Though the subject taught

is styled "Economics" the content of economics as it is cultivated in the universities has undergone imperceptible and also limited change during the last half a century. The English intellectual efforts have been outstanding in the promotion of economic theory. An appraisal of these recent efforts and of their repercussions is attempted in the following study.

1.2. *The Background of English Economic Theory*: The important works that dominate economic thinking in England are Alfred Marshall's *Principles*, A. C. Pigou's *Economics of Welfare* and J. M. Keynes' *General Theory of Employment, Interest and Money.* These three economists have had their independent moorings though bound by ties of common attachment to the same institution, namely, Cambridge. The change from Marshall's precision in expression and width of coverage to Pigou's terseness of logic and eagerness to illustrate every notion by numerous contemporary illustrations and Keynes' preoccupation with the most temporary of events, namely, depression and unemployment was suggestive of the gradual narrowing down of the scope of economics since the days of Marshall.

1.3. *Landmarks of the Twentieth Century*: Two significant landmarks are the Marshallian compendious assessment of scope of Economics and the post-second-world war emphasis on economic growth. In between there were the ripples of Keynesian alterations of classical economics. In the nineteenth century Ricardo and Karl Marx had developed two distinct vistas of economic theory. The latter had a kaleidoscopic coverage of the main issues of economic well being, though much that Marx enquired into were in the nature of scientific

speculation and the practitioners of Marx did not truly reflect Marxian zest for intellectualisation and rationalisation of human conduct. The precursors of western economic theory are Adam Smith, Ricardo, Marx, Marshall and Schumpeter. The recent writings of economists have been built on these important foundations. For instance, W. W. Rostow follows Schumpeterian steps and hence he can be given a berth in the Schumpeterian school. Of these exponents, Marx had very little formal association with universities. Adam Smith was a moral philosopher. Between these great thinkers there were numerous pedagogues who have imperceptibly added to the dimensions of theoretical and applied economics. The tradition of each theoretical school, historical, marginal or modern,[1] has been held in great esteem by their adherents. Like religion, which is initially codified by many prophets for spiritual conduct but is soon found to gather an outer coating of formalism that hides the inner spirit and tends to be a dogma, economic theories of Smith and Ricardo which were relevant to contemporary societies soon ceased to have relevance in spirit to later societies. During the nineteenth century changes in technology and the principles of inheritance of each nation were subject to fundamental and fast changes compared to what had occurred in the first half of the twentieth century. The rapidity with which man has developed resources has created the need for newer dimensions to economic

1. DASGUPTA, A. K.: *Tendencies in Economic Theory,* (Presidential address to the 43rd Annual Conference of the Indian Economic Association at Chandigarh, Dec., 1960) The Indian Economic Journal, Vol. VIII, No. 3, 1961, p. 195.

theory with every fundamental change in technology of production and in the sphere of new resources for material welfare.

2.0. Research in the Scope of Economics:

2.1. *A Restriction of the Scope of Economics*: Notwithstanding revolutionary changes in production on a global basis, which involves a wide sharing of knowledge and resources an important restriction on the scope of economics is that it still discusses economic issues as those pertaining to a closed system. It is almost like the performance of Hamlet without the Prince of Denmark.[2] The economists of the current decades have to formulate theories pertaining to the open economic systems, arising mainly out of practices and ideals of international economic neighbourliness. The confines of national economics are being widened by global policies pertaining to capital flow, trade and exchanges. The imperceptability of such developments may be due to the veils of diplomacy and public opinion which have masked the fundamental developments of the twentieth century. In the first two decades of this century the global co-operation was not of a wide range. Thereafter the sweeping changes in the modes of communication, transport and generation of power, have thrown the closed economic system out of gear. But paradoxically we find that in Marshallian economics of the Pre-1920's a breath of vision which is absent in that of the later theoretical economics.

2. Robertson, Sir Dennis, H.: *Lectures on Economic Principles*, Vol. I, Staples Press, 1960, p. 13.

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2.2. *Width of Alfred Marshall's Outlook:* Marshall's background as an economist was many sided and his outlook was broader than that of many later economists. An evangelican that he was, he developed an intense desire to study mathematics, declined a scholarship at Oxford and with the money borrowed from his uncle won an exhibition in Cambridge. He hoped to continue his research in Molecular Physics[3] but by the new interest in the philosophical foundations of knowledge especially in relation to the existing conditions of society he turned to Mill's *Political Economy* and was won over to Economics. Besides his mathematical and general economic knowledge gained from books he had the benefit of supplementing his reading by personal observations during his visit to the city slums and developed compassion for fellow beings. Thus Marshall came to Economics through Mathematics, Ethics and Religion. His career as an economist began with the appointment to a special lecturership in Moral Science at St. John's College, in 1868. His devotion to study the overall problem of human progress was alive throughout his career, as an economist and his last striving was to put together his ideas in one volume to be called *Progress, Its Economic Conditions.* The book was never completed. He was overtaken by illness and passed away. It was his dictum that "Economics is not a body of concrete truth, but an engine for the discovery of concrete

3. MITCHELL, W. C.: Marshall, Alfred (1842-1924), pp. 155-156, *Encyclopedia of the Social Sciences,* Edited by Seligman, Edwin, R. A. Vol. 7, Macmillan, New York, 1954.

truth,"[4] that found echo in J. M. Keynes' oft quoted maxim: "The theory of economics does not furnish a body of settled conclusions immediately applicable to a policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions."[5] Nevertheless, the apparatus of Marshall's design was put to a highly restricted use by his successors.

2.3. *Post-Marshallian Narrowness of Economic Outlook*: Professor Marshall's writings have been admired in different expressions. Pigou paid the best tribute when he said that the third or the fourth reading of *"Principles"* always gave new meaning in the writings of Marshall. Keynes who classified Marshall as a classical economist and thus exaggerated the neglect of the employment theory by Marshall soon proved that his mentor excelled him in width if not in particular directions of depth. No sooner did Keynes publish his *General Theory* than there was an onslaught on his work by Pigou. The immediate years preceding the war, the experience of the American policy makers, in the throes of depression won for Keynes only a temporary reputation. Professor J. R. Hicks was prompt in calling attention to the *General Theory* being nothing more than a special theory of depression.[6] Keynes and Robbins developed restrictionism

4. KEYNES, J. M.: *Essays in Biography*: *Part II*: *Lives of Economists*: Sec. 2: Alfred Marshall (Macmillan, London, 1933), p. 212.

5. KEYNES, J. M.: *Introduction to the Cambridge Economic Handbooks*: The General Editor upto 1936, (Cambridge University Press, 1936).

6. HICKS, J. R.: *Mr. Keynes and the "classics"*: *A suggested interpretation* (*Econometrica*, Vol. V. pp. 147-159) Also Fellner, William,

in economic scope, which is implied in contemporary writings. Robbins viewed problems of economics as issues of mechanical adjustment of resources to ends, oblivious of ends themselves.[7] In the light of recent development and prospects of reform of economic theory one may have to disclaim Professor Robbins and state that whatever economics is concerned with, it is not exclusively concerned with means as such. Ends, particularly ethical and psychological, are matters of inter-departmental decision and the practice of the economists of isolating themselves from the rest of the social disciplines has left the economists homeless in recent decades. With the rise of the welfare ideal the economists are attempting to find their *habitat*.

2.4. *Neutralism of Professor Robbins*: Between J. M. Keynes and Lionel Robbins a world of non-oriental and ultra-European types of economic thinking had flourished in abundance. The Economic neutralism canvassed for by Robbins and temporary recoveries programmed for by J. M. Keynes have had a limited range of application. Their writings were relevant to the temporary problems of European economics, but there was a defection on their part from formulating generalisations applicable to wider societies and to many periods. In contrast to Marshallian emphasis on economic progress, has been the Robbinsian emphasis to broadcast the importance of better utilisation of resources oblivious of ends. The service

and Haley, Bernard, A. (Edrs.) *Readings in the Theory of Income Distribution*, (Allen & Unwin, London, 1954), p. 468.

7. ROBBINS, LIONEL: *An Essay on the Nature and Significance of Economic Science* (Macmillan, London, 1932) Chapt. II, pp. 24-28.

of Robbins was that he limited the role of an economist to a technocrat. He pointed out that all goods and services that are scarce in relation to demand are economic goods and services. He averred that whatever an economist is concerned with he is not concerned with ends as such, meaning thereby that it is left to experts of other disciplines to familiarise themselves with ends as such. In this disclaimer, L. Robbins was a negativist. In contrast to this one finds in Marshallian writings the broad-based delineations of the problems of an economist. Conceding that developments have been noticed in technical economic studies in the post Marshallian era one may after this distance of nearly three decades of the abandonment of Marshallianism, look back with utter desolation that the attitude of the economist had become more and more commercial and administrative in the contemporary society and his function is now open to serious questions of compassion and intellectual purpose. The resource allocation function of the economist hinted at by Robbins in 1932, had, within the past three decades, become tasks more within the purview of the mechanical engineer or the cost accountant or a civil engineer or technologist rather those within the realm of an economist.

2.5. *The Changes in the Attitude of Economists*: The reticence of economists and their detestation of the pure mathematical discipline was partly responsible for the literary economists having obtained very vague generalisations. Lionel Robbins was also under the cover of vague and wide generalisations, which improved economic science within the confines of resource allocation. His statement that many of the observa-

tions are of "the stuff of our every day experience that they have only to be stated to be recognised" as obvious is a platitude which finds expression in his magnum opus "An Essay on the Nature and Significance of Economic Science".[8] Even if we do not agree with the subtle expression of Koopmans[9] "the beauty and persuasiveness of Professor Robbins' prose do not quite overcome a certain statesmanlike vagueness in the description of the postulates, a vagueness which lingers on in those passages, the intellectual inhibitions of this expression cannot but be questioned. Robbins' effort to inhibit economics is partly due to his haste to raise economics to the status of a science. Acceptable as his aim is, his assumption of what makes a science is faulty. Physical sciences are not characterised by noticing features that are "recognised as obvious." On the contrary the search for the less known about the well-known and the research in an unending line of effort mainly to hang on to the chain of cause-effect are the attributes of science. The physical scientist becomes a mathematician or an experimentalist or whatever he need be and anyone but a mathematician or whatever he need be should the pursuit of his knowledge necessitate such a diversion. So an economist will be a mathematician or an econometrician or a social philosopher or any one disciplinarian should the problems he is concerned with, necessitate such a tangential development. He would cease to be one, when he

8. Robbins, Lionel: *Ibid.*, pp. 16-18.

9. Koopmans, Tjalling, C.: *Three Essays on the State of Economic Science* (McGraw Hill, New York, 1957), p. 136.

tends to be the other, while enriching his parent discipline with new achievements of his intellect. Should therefore the scope of modern economics as delineated by Robbins take economists into the realms of technology, engineering or pure statistics, these developments should be deemed not only normal, but also as the one accepted path to reach the new frontiers of knowledge. On that score the economist should not restrict the scope of the parent science, as Robbins had restricted it.

2.6. *Scarcity is not the Main Problem of Theory*: The man's capacity to generate large quantities of basic goods and services with limited resources is a fait accompli under the application of science and technology. The problems of the economist are those of settling human and material goals of life. A decision to fully respect the human personality and also to economics of value and those pertaining to the significance of living, the balance between work and effort and the normative preference of certain goods to certain other goods, rather than those of positive acquisition tend to be the issues of the aims of economic theory. Instead of scarcity being the central problem of economics we have the problems of restriction on utilisation of certain forms of energy or the regulation of consumption on considerations of ethics and social welfare as objectives of economic behaviour. And behaviour which is economic and thus conducive to human happiness is tending to be of limited range compared to behaviour which is non-economic but highly conducive to human happiness. Economics under such conditions tends to be normative.

2.7. *The Central Problem is Welfare and not Money*: One of the many neglected features of economics has been the theory of value. Edwin Cannan as well as Marshall faced the problem of measurement of economic activity in terms of money; value was constructed mainly in monetary terms. The unpredictable and unstable behaviour of money even within the national frontiers has posed numerous difficulties in subsequent decades in the way of measurement. With the development of planning in many nations attention was shifted to the measure of activities in terms of real goods and services. The introduction of administrative prices raised issues of norms of decisions pertaining to relative values of goods. The index number problem which was the immediate step to the furthering of pure physical measurements also cropped up. Besides different standards of reference for evaluating services and the goods generated in non-monetised underdeveloped countries appear to be essential. In addition to money there have been and are other incentives to better performance of work and for the improvement of production. In the wide range of such indicators we have at the extremities the Stacknovite movement of the U.S.S.R. and the popularity quest of the U.S.A. In essence either of these systems may be said to rely on non-monetary standards of work and effort. The gospel of work and the ethics of public service are the real and effective spurs of development in any society of cultured people. The limitation of the role of money and the specific functions it can play soon tend to be apparent.

2.8. *Rescue of the Concept of Scarcity*: Nevertheless economic science is built on the insecure foundation of the assumption of automatic and/or price regulatory allocation of resourcess. Milton Friedman who has attempted to study this basic issue, compromised with Robbins, except in respect of the realism of the promises. The misdirection of intellectual efforts on the part of empirical economists is partly attributable to the hypotheses which have not only implications but also assumptions pertaining to reality as test of the validity of the hypothesis. If Professor Friedman's interpretation is that the validity and usefulness of any set of postulates depends on observations that conform or at least fail to contradict all their implications immediate or derived it would circumscribe Professor Robbins' belief in the obviousness of the postulates of resource allocation. Koopmans attempts to bounce on Professors Robbins and Friedman in the same pitch. The theory construction which is the theme of these two economists is itself open to several objections. To review a theory one has not only to review the postulates but also to supplement it by a description of the implications by which the theory stands or fails. A gardener who may not know the dynamics of his digging or the agriculturist who may not know the chemistry of the fertiliser is as successful, as a cricketer ignorant of the mathematical formula of the velocity of the ball on its way to the boundary line. The human beings are also unaware of the laws under which their behaviour operates but not to the same extent as the gardener is unaware of chemistry. Natural phenomena are external to man, the social phenomena are part of

man. Economic man is one who behaves and whose behaviour is governed by norms of material welfare. We have a whole array of assumptions of social sciences, namely the normative codes of conduct. Robbins and Friedman being adherents of the Positive School of economics do not concede the normative foundations of the science. They are lead to the concept of scarcity, in a state of vacuum of social behaviour.

3.0. The Claims of Positive Economics

The Fallacy of Assumptions: The fallacy of not probing into assumptions is perceptible even in the otherwise flawless work of Marshall. Marshall's effort to group firms into an industry assumes away numerous micro-economic problems. Limitations of such aggregation have been brought out by recent studies of micro-economics. A new dimension of economics can be created not so much by refining the methodology of approach to positive economics, because persuasive as the logic of Milton Friedman is his purpose is questionable. If economics attempts to understand social causation and if it is to lend itself to the practice of economic art by administrators and other policy makers of industry the subject would soon be taking a turn towards the refinement of the precepts of economic art. The normative range of economic studies would provide scope for the study of not only the feasibilities but also of the desirabilities from the welfare standpoint. Professor Pigou in his earlier writings appears to have had such intentions and his efforts to distinguish welfare from economic welfare indicated his thought processes. Overawed by the flow of knowledge in related

sciences, economists appear to have withdrawn themselves into the shell of positive economics. The scientific attitude ought to have been one of promoting the ramifications of economics into new branches like welfare economics, social economics, ergonomics, economic ethics and allied disciplines. The course of events have imperceptibly been in such a direction, though against the wind. That has occurred in spite of theoretical positive economists. If the question is to be raised as to what ought to be the criterion of normative economics, the answer would be that, that alone is an economic act which an individual can practise, a group can emulate and a society as a whole can follow and will thus promote the life of the individual, the group, as well as the society in a state of material happiness. A shift from the law of brute to a law of man is thus indicated. "Man's triumph will consist in substituting the struggle for existence by the struggle for mutual service. The law of the brute will be replaced by the law of man."[10] This Gandhian gospel of work is suggestive of the normative possibilities of economic science.

3.2. *A Critique of Tjalling Koopmans*: It is as untenable a view to state that every individual maximises the profit just as it is untrue to say that each leaf seeks a position of maximum exposure to sun light. We are not aware of a leaf changing its location on a tree but we do know of things like leaves falling off the tree and new ones growing at points of maximum

10. GANDHI, MOHANDAS KARAMCHAND: Bread Labour, (*Navajivan*, Ahmedabad, 1960), p. 17. Also *Harijan*, 29-6-1935, p. 156.

exposure.[11] Tjalling Koopmans' conclusion from the controversy of these two economists is that "Economics as a scientific discipline is still somewhat hanging in the air." Professor Koopmans' objection to the title of economics as one which has reached maturity arises from his indictment that no economist claims invulnerability of economic theory. We may accept Koopmans' stand to say that this is neither fully justified nor at all needed.[12] But viewing economic theory from the econometric standpoint is viewing it from one angle and not from all angles. The possibility of the precise measurement of phenomena may not be the test of maturity in social sciences. This is an aspect which Koopmans may have to concede. The wealth of deductive reasoning which economic science possesses and which has had for more than two centuries of application to contemplatory events, provided economists with many tools of analysis. Hence it has requisitioned the services of mathematicians, psychologists or of allied sciences and each of them did contribute to the construction of a new dimension of economic science. The real gap in economic knowledge arises out of its limited borrowing in recent years.

3.3. *The Limitations of Positive Economics:*[13] Milton Friedman's persuasion for developing positive economics is not very much distinct from Robbins'

11. KOOPMANS, T. C.: *Three Essays on the Study of Economic Science,* (McGraw Hill, New York), pp. 135-139.

12. KOOPMANS, T. C.: *Ibid.,* p. 142.

13. FRIEDMAN, MILTON: *Essays in Positive Economics: The Methodology of Positive Economics,* (The University of Chicago Press, Chicago, Illinois, 1952, pp. 3-43).

plea. Had Milton Friedman stuck on to John Neville Keynes' three fold division of economics, viz., (a) positive science, (b) normative science and (c) art, and viewed the development of economics from all these three standpoints he would have gone nearer the goal of developing the science on fruitful welfare lines.[14] Economics as an art provides a net work of roads to reach chosen goals. As a normative science it lays down criteria of behaviour that ought to be, and as a positive science it indicates a system of knowledge as it is. The stages of empirical analysis, namely, the construction of a hypothesis and the testing of it, as is accepted by Friedman himself is open to errors of assumption. For instance, the theory of monopolistic competition or imperfect competition is one of complete neglect of an enquiry into the assumptions of human behaviour in a market. This statement is even more valid to oriental societies with non-monetised markets and behaviour conditioned by traditional institutions.

3.4. *The Limitations of the Competitive Ideal:* Granting that pure competition or perfect competition is rare, we have the further difficulty, namely that the rest of the study of price theory is unrealistic. In the simple societies of the past, where there were few commodities and hence few markets, it was possible to think in terms of market behaviour. Such societies had presented complexities arising out of a given commodity. In modern economics, the crisis in theory arises from (1) multiplicity of commodities, (2) non-

14. Keynes, John Neville: *The Scope and Method of Political Economy,* (Macmillan, London, 1891, pp. 34-35).

operability of perfect competition on account of the friction in the mobility of factors of production, (3) autonomous decisions by the departments of governments or other powerful social agencies which deflect the course of supply or demand. The effort of Professor E. H. Chamberlin was to devise a framework of monopolistic competition. The sellers cost which monopolistic competition implies is often unpredictable and occasionally it is more than the rest of the cost of production. Nevertheless, we are in a world of non-competitive markets mainly due to the non-homogeneity of the products. In the society of the future where numerous varieties of goods and services are likely to be produced to meet the manifold requirements of the working and leisure classes, the relative valuation of output and classification on the basis of homogeneity would tend to be of such magnitude as to abandon the notion of the theory of simple competitive price. The substitute for the study of value has to be a welfare decision which is related to the degree of welfare that a good or service may generate, rather than to the cost of factors involved in production or price it can command under conditions of scarcity. Efforts to minimise the "wastefulness" of sellers cost under monopolistic competition would also lead us to this situation. Further, the theory of monopolistic competition does not give an answer[15] as to the degree of desirable or possible differentiation, with a view to maximise welfare.

15. CHAMBERLIN, E. H.: *The Theory of Monopolistic Competition*, (Cambridge, Mass., 1948), p. 273.

3.5. *Free, Pure, Perfect or Monopolistic Competition?* The term perfect competition is employed to connote the ideal conditions of not only securing many buyers and many sellers for the units of an identical product, but also of ensuring least cost mobility and full knowledge of the transaction. These conditions of competitions are post-classical. Neither Adam Smith nor Ricardo thought of these conditions. Adam Smith referred to economic liberty in the manufacture and sale of goods. They alluded to things that are "left to follow their natural course."[16] The refinements in classical usage were intellectually stimulating and nevertheless, unreal. It is now of general acceptance to state that there is neither free nor pure nor perfect competition, and thus monopolistic competition is the usual feature. As was pointed out earlier monopolistic competition also pertains to a nebulous condition. The preoccupations of economists to employ the aforesaid four variations of the term competition, have been so swift and unceasing that fundamental thought, as to the universes to which they are relevant, has not been bestowed. A feature of inadequacy, that is now obvious is that theories of competition have been built up with one sided perfection of the knowledge of modern production and its related technology. It is open to question, whether comparable attention has been devoted to develop a satisfactory theory of consumption. After

16. Abbott, Lawrence: *Quality & Competition* (*Columbia*, 1955), Also Adam Smith: *The Wealth of Nations*, (Modern Library Edn., Book I, Chap. VII, pp. 56-62); David Ricardo: *Principles of Political Economy and Taxation* (Gonner Ed., p. 7); Stanley Serons, W.: *The Theory of Political Economy*, (4th Edn., p. 86).

the "natural course" of events came to be restricted, there was a kink in the theory of consumption. If it is not arbitrariness, it may be emulation of a wealthy society, or the postponement of the present needs to secure future supplies that constitutes a consumption decision. The theory of consumption is however the Cindrella of modern economics. The charlatan or the quack rules this territory.

4.0. The Range of Normative Economics

4.1. *Ultimate Aims of Economics and Related Sciences*: The author of the *Affluent Society* quotes with approval the Marshallian dictum, "the economist like everyone else must concern himself with the ultimate aims of man".[17] This concern is bound to be inadequate if economics is confined to the technical relationship of scarce means to many ends without questioning and shaping the ends as such. The development of knowledge in human sciences is conditioned by certain features peculiar and unobservable in pure science. The scope for the development of one social science is partly determined by the trend of development of related social sciences. With new ideas of political society there emerged the concept of economic liberalism. With the questioning of the foundations of religion the Hegalian dialectics were given expression to, with the doubts in the minds of the French and German socialists as to the viability of the institutions of property and law there arose the communist manifesto. With the realisation of limitations as to the frontiers of

17. Galbraith, J. K.: *The Affluent Society,* (Hamish Hamilton, London, 1958), p. 3.

the human mind there arose a new field of electronics and robot construction. These changes were the results of the interaction of related sciences. Politics, religion, ethics, sociology, law and psychology have therefore risen together and the scope of each of them widened or narrowed as further developments necessitated.

4.2. *Social Implications of Economic Individualism:* The first half of the twentieth century which has placed the razor sharp intellect of the economist at the service of the administration has also witnessed the amazing development in the creation of energy and mechanical power for the production of goods and services. It is the want of will and also the want of an adequate enquiry into the purpose of human life and the goals of humanity that are inhibiting economic development in the many countries of the world. The hypothesis that rising public expenditure means public welfare is highly to be discredited, and likewise the notion that the common agency of the society namely government should in gradual stages replace individual decisions may have to be given up. Perhaps a doubtful hypothesis is that individuals may be viewed as distinct entities from biological families to constitute a society and that they can make decisions. It is a fallacious sociological product of West European individualism.[18]

18. SHAW, BERNARD: *Everybody's Political What is What* (Constable, London, 1945), p. 69. Bernard Shaw does not accept the view that parents are more likely to take care of the welfare of their children, than wardens of Hostels under state management. His assumption is that parents would not consult appropriate experts on matters pertaining to the upbringing of children. It is easy to persuade parents to give up the attitude; but it is not equally easy to persuade the wardens to assume parental care as a career.

In oriental societies the family is the unit. All economic decisions of the society which undermine the viability of this social unit create new problems, the solutions for which are not either available or are found to be outside the purview of economists. The modern state is a Leviathan grown far beyond its ambit of economic authority. Welfare economics has given a new lease of life to it.

4.3. *Oriental Stability and Mode of Growth:* In oriental societies, ways of living and quest have been for long non-material. Their beliefs in family, kinship and status, have had a certain stability of outlook and steadfastness of purpose. The impact of West European education has done them good in terms of pure science, has widened their outlook and intensified their knowledge of natural phenomena. The social problem being one of living with fellowmen and one of adjusting ends to means on both moral and material plane a high degree of stability and order has been feasible in such of these oriental societies as have retained their social mores including ideas of sharing rather than that of individual conspicuous consumption. Notions of equality and competition have been often superseded by ideas of adaptability and acceptance of status which in turn enabled the conservation of what these oriental economies have been able to produce. Instead of competition leading to strife and thus to efficiency, the status bound societies under the spur of duty and dignity reached those higher levels of efficiency as are not only permissible under status but also desirable for society.

4.4. *Non-economic Factors of Growth:* To change the pattern of an economy or the earnings of its mem-

bers, the economic measures like taxation or aids to agriculture or industry are contemplated. These efforts have only a limited effect on economic growth. In contrast the acquisition of education, social habits, kinship, legal rights or of political attitudes are powerful forces in this direction.[19]

The importance that is attributed to non-economic factors which bring about economic growth in recent literature is suggestive of new borderlines of economic research. Professor W. W. Rostow listed[20] the desire to achieve material welfare, the propensity to have children, the propensity to adapt science to material welfare and the size of the working force in the total population as important factors of growth. There have been national economies which have deteriorated in the absence of these propensities. By the motivation of a purely racial or martial character, a few countries have risen to heights of economic life, like Japan or Germany. The stages of economic growth[21] are also not as sequential as Rostow pointed out in his analysis of a few economies. The main condition, namely, reinvestment of about 10% of the national income, so as to set the stage for selfsustained economic growth may be an

19. SINGH, TARLOK: *Poverty and Social Change: A study in the Economic Reorganisation of Indian Rural Society.* (Longmans, Green & Co., Ltd., Calcutta, 1945, pp. 170-171.

20. ROSTOW, W. W.: *The Process of Economic Growth* (Oxford, 1952, Chap. I).

21. ROSTOW, W. W.: *The Stages of Economic Growth* (Cambridge, 1960, Chap. II, on five stages); ROSTOW, W. W.: *The Stages of Economic Growth* (Cambridge, 1960, p. 37).

essential condition but not a sufficient condition, because it is a purely permissive economic factor.

If the national income of a country is such that it is not readily available for the formation of required real physical capital or when the obsolescence of techniques warrant replacement of existing plants at a rate more than 10% of national income, the main condition of Rostow may not be valid. A further basic objection to Rostow's condition is that, it is not clear in respect of investment priorities. Economists who view this discipline as one which determines the ends of development efforts, would like to be assured of the criteria governing the utilization of about 10% of national income. At this stage, decisions are often extra-economic, if we accept the limited scope of positive economics.

4.5. *Normative Goal of Economics*: The question that would then be raised is whether the extent to which economics is conditioned by normative goal can be determined. Those of the marginal school contend that it is a mere question of accepting the value judgments of philosophers and men of ethics. The loss of perspective appears to operate against this passive acceptance of the disciplines, namely, philosophy, ethics and religion. The material success which economics as a discipline has enjoyed has created for it far more votaries of study than did the other social sciences. If it may be said of nations that where wealth accumulates men decay, it may also be said of economists that as demands on their time mainly due to the claims of ephemerality increases, the development of the social and welfare aspects of economics declines. The foun-

tain of knowledge that has poured forth has been poisoned at the base by the notion that whatever economics is concerned with, it is not concerned with ends as such. The welfare ideals have thus faced a rude shock in 1930s and in the subsequent stages of intellectualisation. There were misgivings about the extremist claims of positive economics even in the thirties of this century. Rev. Fr. Carty summed up the compromise between the exponents of positive and normative economics when he said, "whilst positive science is useful so far as it goes, it does not go far enough; it covers only a part of the field, and this is the reason why a growing need is felt for the recognition of a practical science of economics covering the positive and normative aspects of it".[22] Since Fr. Carty uttered these words positive science had lost considerable ground.

4.6. *Economic Growth vs. Welfare*: Not long before did people realise that it is one thing to maximise economic growth and it is another to maximise economic welfare. The lags essential for increasing economic growth are of longer duration than the lags in the change of attitudes from static living to dynamic higher levels of living. The resultant gap between the desire for higher standards of living and the required capacity of the economy to generate goods and services for this level of living constitutes the cause of unrest in many underdeveloped economies. These wants instead of being satiable are ever increasing, mainly on account

22. CARTY, REV. FR.: *Economics as Social Science.* Sir William Mayer Endowment Lectures, Madras University, (St. Joseph's Industrial School Press, Trichinopoly, H.O. 1940), p. 60.

of the attitude of the neighbouring spenders. Welfare is a state of mind. Even biological wants are to some extent mental expressions. The environment and inter-personal social relations bring out a multiplicity of human wants. Pleading caution in urbanisation, moderation in the tempo of industrial development are ideas canvassed for by a minority of theoretical economists. But the attractiveness of imitative economic thought rather than creative economic thought has accounted for the lapse of theoretical knowledge. The development of the theory of economic growth in the post-1945 period revealed a fascinating instance of what neglect of theoretical thinking had cost the underdeveloped economies. At a time when oriental centres of learning have been busy abandoning Ricardian and Marshallian systems of economy the west European and American centres of learning have, besides reappraising these systems, been equally busy in enquiring into the Keynesian, post-Keynesian systems of economics. The advance of Keynesian discipline was due to the efforts of Joan Robinson, A. P. Lerner and R. F. Harrod who have built a dynamic structure into Keynesian static frame work. These are efforts on the part of intellectual gymnasts, whose counter-parts are now rare in oriental economies.

4.7. *An Ergonomic Consideration:*[23] A wide base is needed for construction of relevant theories. An applied economist who is to undertake a project for the

23. SHANMUGASUNDARAM, V.: *An Ergonomic Approach to the Employment of Labour.* Paper read at the All India Labour Economics Conference, Dharwar, (1961); Indian Journal of Labour Economics, (Lucknow, 1962).

modernisation of a city transport for instance, should have a wider background than what he has been equipped with by specialised education. Many economists who have had little or no knowledge of physics, chemistry or basic physiology imparted to them as a part of the scheme of study would be oblivious to the ergonomic implications of urban bus transport system. That foul gas particularly carbon monoxide discharged by the burning of petrol or oil would provide sufficient mild poison to fundamentally affect the health of the urban people is perhaps a notion which may not occur to an economist planning for transportation. But should he be aware of the offshoots of the economic behaviour in terms of health or of physiology he would certainly pose problems for those competent to study them. When new disciplines like ergonomics and industrial psychology are developed the scope of theory tends to be widened. Generalisations may appear to have limitations. They may not be adequately backed by experience. If generalisations are to be restricted to experience the method of developing knowledge would be limited to empiricism. Logical speculation, insight into and philosophising ends are methods of developing new frontiers of economic theory.

4.8. *Normative Character of Welfare Economics*: The normative turn is noticeable in modern welfare economics. Since the early thirties, there were landmarks in welfare economics though welfare economics does not appear to have been the sole preoccupation of any economist.[24] The facets of welfare economics are:

24. MISHAN, E. J.: *A Survey of Welfare Economics*, 1939-1959, (*Economic Journal*, London, Vol. LXX, N. 278, June, 1960, pp. 197-265).

(1) theory, (2) the measurement of welfare changes by indicators, mainly index numbers, (3) the theoretical innovations of socialist economics, and (4) the probe into individual behaviour consistent with welfare ideals. Welfare economics is chiefly concerned with ethical judgements to the extent they impinge upon the community's welfare. On the welfare of the individuals or families depends the welfare of the community. The unit of society has to be defined and the sum total of the welfare of the community should be maximised in terms of the aggregation of welfare of such units. Bergson's[25] social welfare function is a mathematical version of this measure. An effort to make one unit better off without anyone being worse off is a theoretical suggestion to promote the community's welfare. But this poses psychological responsibilities arising out of a demonstration effect as spot lighted by Ragnar Nurkse. In the poor economies relative poverty is magnified by the demonstration of wealth and conspicuous consumption, by one person or a group that is better off without making the other person worse off. The result is that in poor societies relative poverty is more keenly felt than absolute poverty. Gunnar Myrdal's generalisation that for mankind as a whole there has been no development because richer countries have been developing and poor countries with large population were stagnant can be borne out only in terms of relative

25. BERGSON, A.: "On the Concept of Social Welfare", *Quarterly Journal of Economics,* 1954, p. 233, and "Socialist Economics', in *A Survey of Contemporary Economics,* Vol. I, (Ed.), (American Economic Association, Allen & Unwin, London, 1918).

measures of international welfare.[26] These issues have been studied after the construction of welfare economics. During the last three decades the development of this subject may be attributed to Piguo's *Economics of Welfare,* Bergson's *Reformulation,* I. M. D. Little's *Critique,*[27] Lerner's *Economics of Control* and Hicks' *Revision of the Demand Theory* (1955) and Arrow's *Universal Social Welfare Function.*[28]

5.0. Methods of Theoretical Research:

5.1. *The Use of Scientific Terms*: The social scientists, namely, philosophers, anthropologists, psychologists or sociologists, state that the development concepts of the early man have found expression in terms of symbolisation, generalisation and imaginative substitution. The development of ideas pertaining to society are thus meant for simplicity and comprehension or for replacement of better ideas. The role of the scientific terms is to convey an unknown concept through an interpretation of the shade of a known word. Written terms are symbols of great academic advancement in the exploration of ideas. In science or advanced technology the terms are related to external objects. But in social sciences there is a tendency to substitute a known word to express hither to unknown ideas. Hence a certain amount of ambiguity occurs between real interpretations of the word and new intend-

26. Bauer, P. T.: *Some Economic Aspects and Problems of Under-Developed Countries,* (Forum of Free Enterprise, Bombay, 1958, p. 6).
27. Little, I. M. D.: *A Critique of Welfare Economics,* (Oxford University Press, London, 1950).
28. Arrow, K. J.: "A difficulty in the Concept of Social Welfare," (*Journal of Political Economy,* 1950, Vol. LVIII No. 4, p. 326).

ed interpretations of the word. This precisely has been the scientific task of people in the use and assimilation of economic ideas of economists in the oriental countries. The terms mercantalism, liberalism or laissez faire have meant in the context of English economic history certain connotations applicable to given situations. An effort to find substitutes for these words would be even more difficult than it is to find substitutes for words like wheels, motor or plane. The words of engineering can be illustrated by external objects and the familiarity with the object and the co-terminus familiarity with the words offers a ready solution. But a term like 'Economic Welfare' or 'incentive to invest' or 'marginal efficiency of capital' can be said to have meaning in the context of certain economic systems like the system of expanding state activities, laissez faire, full employment of resources. Often the use of theory in Indian Economics has been without very much relevance to the theoretical essentialities of oriental economies. For instance, the concept of rent or wages of the Ricardian sense or the concept of population in the Malthusian sense can be viewed more appropriately in the system of landlordism which obtained in the United Kingdom or in the social environment of the 1800 of the United Kingdom when the means of subsistence were outstripped by the rising rate of population. Apart from viewing the problems of economics from certain known theories and deriving benefit thereby to the extent the knowledge of the past can be indented upon, the eagerness on the part of oriental economists to theorise or generalise observed phenomena appears to have faced a considerable set-back during the last two cen-

turies. It was during those two centuries that economics as a discipline emerged.

5.2. *A Behaviouristic Approach*: In behaviour theory of economics, besides language we have impulses of stimulus,[29] the properties of response and the lessons of trials for comprehension. The cultural behaviour of individuals is deemed mainly a feature of stimulus response theories. Stimulus is a special area of study in experimental economic psychology. Motivational reinforcements appear to be at the back of most stimuli. Transference of behaviour from one situation to another and the validity of generalisations are conditioned by human behaviour in concrete situations and hence generalisation of the transfer behaviour is possible. Hedged by mechanical sciences and mathematics, into which economics has made considerable incursions, the subject has to effect further and commensurate assimilation of the disciplines of psychology, sociology, health and psychiatrics.

5.21. *Behaviouristic Measurement*: The measurement of changes in stimuli may be effected in terms of (1) The variation of the present situation from the past situation, (2) the behaviour of the organism in these previous situations and relations between the degree of similarity of the past to the present situations and (3) the probability of repetition of previous response. These are features observable in the economic practice of not only the laissez-faire system but also of the quasi-

29. LOGAN, FRANK, A.: *Behaviour Theory and Social Sciences*, (Institute of Human Relations), Yale University, New Haven, 1955, pp. 54-55.

governmental system. In the latter certain changes in behaviour have been occasioned mainly because of the exigencies of the demands on the political system by the new democratic institutions and because of changes in the elements which constitute the democratic bodies at the periodical elections. The economist who side tracks these general social and psychological phenomena of changing institutions is ignoring the most powerful force at work in altering the course of economic life. The material origin and the variety of human motives, and their implications in respect of welfare become the central theme of economics, just as means-ends relationships have been for a long period the theme of economics.

5.22. *Models of Behaviour Systems*: It has been demonstrated that models of behaviour can be constructed with a view to study typical behaviour situations. The pioneer in this line is Hull[30] who has introduced certain measurements in the approach.

Model 1: It is intended to study the dimension of behaviour in terms of the time rate of performance n/t. The different rates will be treated as responses. The effective exitatory tendency sER for each rate is indicated. If habit strength is equal to sAR intensive motivation is equal to sKr and drive is equal to D, reactive inhibition is equal to Ir. We have the positive relations for the time rate of performance,[31] viz., n/t.

Model 2: The opposing positive and negative effects of reinforced performance are considerable in

30. Hull, C. L.: *Principles of Behaviour*, (Appleton- Century, New York, 1943).

31. Logan, & Others: *Op. Cit.*, pp. 119, 125.

this model. The assumption is that the higher the general behaviour activity level of the subject the greater the drive. In this model, a unit of seeking or driving behaviour, viz., 'B' is constructed. 'B' is not proposed to be counted. It is meant to conceptualize the free behaviour problem. In any interval of time the subject we are experiencing will engage us in a certain amount of general activity and a portion of this may be thought of as an attempt to perform and 'B' denotes a unit of such attempts. B/t(D) is an increasing function, viz., as drive increases the amount of the subject's striving will also increase. Thus the first critical functional relationship for model (2) is "D" is equal to "D". "D" (n/t, B/t) is obtained with two relations D(n/t) and B(t(D).

5.3. *Study of Economic Responses*: Responses are defined in four different ways with respect to (1) movement of man in occupations, (2) changes made in an emergent situation, viewed as an area study like war, depression, etc., (3) one or more features of income, incentives, etc., on welfare, and (4) some presumed internal state of affairs which the observer somehow perceives in the welfare and materialistic attitude of the individual or family organism under study. These studies have been referred to as: The Movement type,[32] Apparatus type,[33] Other Organism type,[34] and

32. BIRDWHISTELL, R. L.: *Introduction to Kinesics*: An annotation system for analysis of body motion and gesture (Washington, D.C., 1952).

33. JACOBSON, R. FAUT, C. G. & HALLE, M.: *Preliminaries to Speech Analysis*: the distinctive features and their correlates (Cambridge, M.I.T., 1952).

34. HERSKOVITS, M. J.: *Man and His Works*, (Knof, New York, 1948).

Internal State type,[35] of defining responses. In these types we have numerous inter-relationships of economic behaviour. But responses themselves are economic activities and are occasionally best perceived as aggregates rather than micro-responses. The aggregative responses are those of special interest to the economist who studies growth of society.

5.4. *Mathematical Method.* The limitations of mathematical method are perhaps even more familiar to mathematical economists than can be surmised by the literary economist. With a large and continuous flow of economic theories and knowledge of the past a need has arisen to apply modern algebra and new findings of mathematics to economic issues. The notion of utility, and the nature of demand pertaining to large aggregates are features which are amenable within limits and to study in terms of econometrics. Professor Hicks in his *Revision of the Demand Theory*[36] espouses the econometricians' approach to unravel what was explicit in his *Value and Capital.* His indebtedness to Marshall and earlier writers is not the less on this account. The last half a century beginning with Pareto's *Manual* published in 1906 initiated a number of basic enquiries into the foundations of economics like *Value and Capital by* J. R. Hicks and P. A. Samuel-

35. PARSONS, T.: *The Social System* (Free Press, Glencoe, Ill., 1951) and also, PARSONS, T, BALES, R. F., & SHILS, E. A.: *Working Papers in the Theory of Action* (Free Press, Glencoe, Ill., 1953).

36. HICKS, J. R.: *Revision of Demand Theory* (Oxford, 1950); HICKS, J. R.: .*Value and Capital* (Oxford, 1939); SAMUELSON, P. A.: *Foundations of Economic Analyses* (1947); ALLEN, R. G. D.: *Mathematical Economics,* 1956; TINTNER, GERHARD: *Econometrics* (John Wiley, New York, 1952).

son's *Foundations.* These have given a new twist to the subject and perhaps the monumental work on this subject in Neumann's *Theory of Games* and Tintner's *Econometrics.* The more recent and outstanding work is *Mathematical Economics* (1956) by R. G. D. Allen. Problems faced anew in the Theory of Games are those which involve mechanism of social organisation. The theory of rational behaviour which is assumed away by Robbins is subject to an intensive study by the games of strategy. It is therefore a new branch of the subject. The impossibility of developing economic science further without an understanding of the behaviour of the numerous persons who are encountered by the participants in the economy would be a fruitless pursuit. Individuals are players in a game. The players in a game have motivations, have certain fund of information and are governed by rules of conduct. But within these features the varieties of a game are as many as are possible facets of human behaviour. The game is the totality of the rules which describe it. Every particular instance at which the game is played in one—specific way—from beginning to end is a play. In Bridge the play corresponds to a rubber and in tennis to a set.[37] Each move in a game is a component element and it provides an occasion for a choice between various alternatives. The rules of game are distinct from the strategies which players employ, the latter being governed by the free choice of the players. With neces-

37. NEUMANN, JOHN VON & MORGENSTREN, OSKAR: *Theory of Games and Economic Behaviour* (Princeton University Press, Princeton, 1953), p. 49.

sary information and signalling of events it is now possible for economists to analyse phenomena and to harmonise events and aspirations of the people without resorting to the cruel policy of commissioning the political expert often called the rationing authority or the planning body to enforce decisions in the manner of a fiat.

5.5. *The Method of Clinical Study*: Not withstanding the common features of human anatomy and physiology, irrespective of race, country or climate, the medical practitioners do not resort to ex-cathera pronouncements of cure to be attempted. A clinical study and diagnosis is deemed invariably the most important feature of treatments. With the advent of new methods in diagnosis by the use of blood chemistry, X'ray and latest chemico-pathological and laboratory tests, a thorough check-up of the patient can be made. These tests have made it possible for the medical practitioner to study every patient thoroughly before advising the line of treatment. Such individual studies of patients enable the medical men to recognize the "number one killers" of mankind. Economists, when they are called upon to face major crises, become keenly aware of the inadequacy of the diagnostic tests. Painstaking and fundamental studies precede the formulation of new methods, and the social scientists, who cannot control the condition for the purpose of experimentation, should test contemporary data, with a view to draw from them enduring generalizations.

5.51. *Clinical Study of Economic Issues*: Economists who draw statements of policies from non-diagnostic studies do not seem to be so much prone to be called

upon to forfeit the right to be an economist, as a medical man, lawyer or a teacher, who in the event of professional misconduct is called upon to give up his calling. The reasons are that the harm which any default on the part of an economist would entail is not immediately known, whereas any fault on the part of a medical or legal professional man would be known immediately.

A code of professional nature appears to be essential for the economists. His wrong diagnosis, if ever he attempts a clinical study or diagnosis would affect not one patient, but large group of people of a whole country. In the event of a policy like planning industries, or agriculture or trade, the consequences of current efforts on the course of future events tend to be unalterable. The calling of an economist is thus no less worthy of a professional code of conduct. It is even more essential that when his services are requisitioned as an expert for the nation, he should state not only his conclusion but also the way in which he arrived at the diagnosis, so that when another expert is called in simultaneously or later, he would be able to build up his case, mainly by alteration or supplementation of methods.

5.52. *An Attempt at an Economic Clinical Study*: The plausible causes of an event may be many, in the case of an economic distress, as in the case of a physical malady. For instance, J. K. Galbraith refers to eight clinical considerations in the diagnosis of poverty as an economic disease. They are suggestive of different courses of treatment:

1. The country is poor because, the people are easy-going, idle, unreliable or unambiitious.
2. The country has been kept in poverty by its colonial oppressors.
3. Poverty is the result of class conflict and exploitation.
4. Poverty is caused by ignorance.
5. Poverty is the consequence of war, civil disturbance and misgovernment.
6. Poverty is the result of insufficient capital.
7. Over-population is a cause of poverty.
8. Backwardness is a cause of poverty.[38]

5.6. *Biological and Sociological*: The perennial longings of life like desire for equality as also the equally biological truth of the inherent equality of man are features which require an equilibrium in a social process. The Laskian[39] observation that he alone had a right for education who can benefit by it and can give it back to society in redoubled measure is a statement of rights. An equally valid statement of liberty is that every man shall have the conditions provided for him which would enable him to realise the utmost he is capable of. The theory of social balance emerges in such a context. And the final problem of the productive society is what it produces. The social balance which is conditioned by investment balance leads the

38. GALBRAITH, J. K.: *The Causes of Poverty*—A Clinical View, (Gujerat University, Ahmedabad, 1962).

39. LASKI, H. J.: *The Grammar of Politics*, (Allen Unwin, London, 1926) Chapters I—III.

economist to the educationist. With increasing material capital investment necessitated and approved by the authors of economic plans the measurement of relative gains from educational and other outlays should be done. Economic science which has had a tradition of neutrality between ends has operated against investment in social and biological overheads. This is the theme of the *Affluent Society* (*1949*) by Professor J. K. Galbraith. The economists appear to have overlooked the countervailing power of social institutions in averting technological monstrosity.

5.7. *Political Science and Economic Theory*: The repositories of executive power are the departments of government. Students of public finance have been familar with the expanding role of government and hence the expanding range of public expenditure. With new duties of the government, new features of democracy like multi-variate and costly elections, the increase of population, and the many international and inter-governmental financial obligations like subscriptions to international agencies, have added to the cost of government in recent years. The deep perception of the philosophy of government and its adequacy to promote social welfare appears not to have been adequately undertaken. If societies in pre-welfare states have functioned with a modicum of happiness, after the rise of welfare states and the increase in modern public expenditure there should have been a higher degree of human welfare and happiness. Firstly, the economist need not be inhibited by resources allocation. Technology has a scope that can offer the resources necessary if a social programme can be condi-

tioned for human welfare. The economist who in his limited range of acceptance of the political ends of government devises piece-meal programmes of economic policy overlooks these possibilities. In a pluralistic state of sovereignty the place of the theoretical economist is likely to find its proper status. In the modern welfare state the status is partly the result of defeatism in economic thought of earlier decades. The decisions are made without reference to ends and the ends themselves are not the subject matter of adequate study.

6.0. Men and Institutions in the Building of Economic Knowledge in India

6.1. *Construction of Knowledge by Entrants from other Disciplines*: It cannot be said that the construction of economic theory has been the exclusive privilege of professional economists. It is well known that Cantillion was a banker, Adam Smith, a professor of moral philosophy, Ricardo, a stock-broker, and J. S. Mill, a servant of the East India Company.[40] In India Dadabhai Naoroji was a parliamentarian, Romesh Dutt was a member of the Civil Service, and Gopalakrishna Gokhale, a lecturer in english literature and mathematics. Besides these men of allied disciplines, who contributed to economics there was Mahadev Govind Ranade who began his career as a teacher of economics in 1864. Ranade strongly criticised the assumptions of English economists like Adam Smith, David Ricardo and Robert Malthus. Ranade was under the influence of

40. Robbins, Lionel: *The Economist in the Twentieth Century*, (Macmillan, 1954), p. 1-2.

two American thinkers, viz., Hamilton who believed in the concept of absolute freedom and as a prerequisite to it in free trade. Ranade also believed in Friedrich List's maxim that national well-being implies many-sided development. He doubted the efficacy of the tools of price determination under conditions of competition. In contrast to Ranade (1842-1901) who was a trained economist there was Dadabhai Naoroji (1825-1917) who was a parliamentarian during Victoria's reign and a trader by profession. He visited England for commercial purposes and had intellectual diversions to comprehend features of Indian economy and government. His writings which are replete with references to the "drain theory" are intelligent but one-sided indictments on British administration from the point of view of an Indian national. His contributions to economic thought would have to be viewed as a nationalistic interpretation of British economic administration.

6.2. *Former Administrator*: *Romesh Dutt* (1848-1909) had an advantage which neither Naoroji nor Gokhale or Ranade possessed. He was an official of high rank in the Indian Government and had leisure and opportunities to acquaint himself with the details of the economic life of the people. He was so devoted[41] to scholarly pursuits that he retired voluntarily under twin motives, namely the pursuit of literary work and the quest for independent political activity. He was erudite and steeped in Ricardian economic literature. But his method suffered from a want of logical conti-

41. GADGIL, D. R.: *Critical Introduction*: *The Economic History of India,* by R. Dutt (Vol. I: Under Early British Rule, 1757-1837), Government of India, New Delhi, 1960, p. vi.

nuity. There was no effort on his part to disprove or to prove. He attempted to hint at possible conclusions which were left to the readers to draw. But his was a scholarly attempt to present data to picturize Indian poverty. He was more a historian than an economist and his book *Famines in India* (1900), and *Economic History of British India* (1904) provide massive documentation of events with which he became familiar both from experience and from records. To the question that whether these practitioners of economics had left behind them theories that may be attributed to them the answer would be that India lacked theoretical economists during the nineteenth century. The Indian economists were nevertheless inhibited by the notion that Indian economy was drained of her resources under colonial pressure.

6.3. *Former Statesman*: *Gokhale* (1866-1915): Gopalakrishna Gokhale was, by training, a mathematician who later occupied the chair of History and Political Economy. He was a member of the Viceroy's Executive Council in 1902 and three years later he was elected President of the Indian National Congress. Like him Naoroji also occupied the presidential chair of the Congress. Gokhale's impact on current economic policy was felt in determining salt duty, cotton duties and land revenue. When in 1895 a Royal Commission on Financial Reforms was appointed, Gokhale served on it along with Surendranath Banerji, G. Subramani Iyer and D. E. Wacha. Gokhale was the author of the Minority Report[42] which insisted on a direct representa-

42. GOPALAKRISHNAN, *Indian Economic Thought*, (Peoples Publishing House, Delhi, 1958), p. 132.

tion of the people of India in administration. Gokhale said "the position virtually amounts to the administration of the finances of one country by the executive of another." Gokhale's main contribution appears to be the study of Indian Public Finance and hence he may be viewed as an applied economist.[43]

6.4. *A Methodological Omission of Contemporary Person-based Case Studies by Indian Economists*: In developing Indian economic thought, many economists of India are prone to steer clear of such contemporary events and careers as outlined elsewhere in this paper because of the fact that they are too near the events to condition them for objective appraisal. The fallacy of this intellectual approach is apparent if we consider some of the merits of the methodology of person-based current theoretical and empirical research in four directions: (1) There may be a gain for social scientists, who in current decades may obtain an interpretation of certain facts which only men, who are authors of events can provide. The advantage of reading between the lines can be maximized. The participant observers may provide the interpretation which the researchers seek; (2) Ideas and narratives of these men of achievements in life, which have not found their way into printed or other recorded form may also be obtained by researchers; (3) Re-interpretations of economic and other social events at a later date are not precluded by such current research studies. It is always open to researchers of a later date to view the

43. LOKANATHAN, P. S.: *Economics of Gokhale*, (*Indian Journal of Economics*, Allahabad, 1942), pp. 225-234.

same events in different perspective depending upon the claims of their age. The right of history to record its verdict from age to age is not forfeited because an effort at current study had been made; (4) The rapidity of development in social sciences can be ensured if recent events are also brought within the purview of theoretical and applied research.

6.5. *Contemporary Statesman and Industrialist: Sir A. Ramaswami Mudaliar* (B. 1887): The life and career of persons of high rank are conducive to person-based case studies. Their speeches, writings and reports are bound to provide abundant materials for theoretical and historical economic research. Sir Arcot Ramaswami Mudaliar[44] who is one of the few contemporary Indians, who have had rare opportunities to shape the course of recent economic and public life at the national and international level, may be considered as an illustration. With a wide background of participation in public affairs, like Gopalakrishna Gokhale he strove hard in his early life to spread economic and social liberalism.

44. MUDALIAR, SIR ARCOT RAMASWAMI: Madras Legislative Council (1920-26); Editor, "Justice" (1927-35); Council of State (1930); Indian Legislative Assembly (1931-34); India Council (1936-37); Adviser to the Secretary of State for India (1937-39); Representative of India in the War Cabinet and Pacific War Council in London; Member, Executive Council of the Governor-General of India (1939-42); Dewan of Mysore (1946-49); President (1946; 1947) and Senior Vice-President (1950, 1951) of the Economic and Social Council of the United Nations.

He was associated with Expert Committees pertaining to Federal Structure, Round Table Conference, Army Retrenchment, Special Tariff (1930), Reserve Bank (1934) and Statutory Railway (1936) Economic Committee of the League of Nations, Committee on Forced Labour International Labour Office Conventions, Shipping, Textile, Industrial finance, and Import—Export.

In India at the outset and later at the international conferences his oratorical talents and eminence in public affairs subserved the cause of economic and social justice. He took part in the deliberations for the formation of the United Nations Organisation and was a signatory of its original charter. He was elected twice to the high office of the President cf the Economic and Social Council of the United Nations. Having been a member of the War Cabinet of Sir Winston Churchill, he knows, as no other Indian can claim to know, the economics of the costliest war that humanity has ever waged. During the last one decade he has been an industrialist and entrepreneur. In that capacity he spans all the continents. His life, like that of J. N. Tata, and the lives and writings of great men of their ilk offer vast materials for theoretical, empirical, behaviourist, and historical methods of studies in economics.

6.51. *Contemporary Publicist: C. Rajagopalachari* (B. 1879): The life, career, speeches and writings of Chakravarthy Rajagopalachari[45] show a coastline of changing tides of political and economic thought of India during the last three decades. After a career as a lawyer for over two decades he became a publicist known for clear expression and biblical parables. He was a very close associate of Gandhiji in public life and he rose to the position of the Governor-General of In-

45. RAJAGOPALACHARI, CHAKRAVARTHY: Lawyer (1900-19); Editor "New India" (founded by Gandhiji); General Secretary of the Congress (1921-22); Premier of the Presidency of Madras (Congress Ministry) (1937-39; 1952-54); Minister, Government of India (1947; 1951); Governor of West Bengal (1948); Governor-General of India (1947; 1949-50); Founder of Swatantra Party (1959).

dia. He has had in later years the courage of his conviction to question the theoretical assumptions of the policies of his own party in power, namely, the Indian National Congress. His intellectual make up is that of a Benthamite. Like Professor John Matthai who questioned the operational techniques of planning in India and sought relief from the Indian Cabinet, the elderly publicist set out to boldly differ from the current official ideologies and lead the people to form a new political and economic movement.

6.52. *Contemporary Administrators: C. D. Deshmukh* (B. 1896): In subsequent decades, like Romesh Dutt, there were experienced personnel of the Indian Civil Service who wrote on the economic conditions of the country. As an illustration the writings of Sir Chintaman D. Deshmukh[46] may be pointed out. His appraisal of the economic developments in India is both chronological and theoretical. He has recorded many of his insights into contemporary events which were known to him in his capacity as a representative of the country at various international conferences, as governor of the Reserve Bank[47] of India and as a member of the Indian Cabinet. His records are primary sources for research in the growth of the economy. Similarly the speeches and writings of Sir R. K. Shanmugam Chetty, who was associated with international trade

46. DESHMUKH, SIR C. D.: *Economic Developments in India—A Personal Retrospect*, (Dadabhai Naoroji Memorial Lectures, 1957—Asia Publishing House, Bombay, 1958).

47. DESHMUKH, SIR C. D.: *Art of Central Banking* (B. G. Kale Memorial Lectures, Gokhale Institute of Politics and Economics, Poona, 1952).

agreements and those of Sir V. T. Krishnamachari, who after holding high positions of administration, was Vice-Chairman of the Indian Planning Commission, would provide material for current empirical and theoretical research.

6.6. *Role of Universities and Institutions in India in the Study of Economic Theory*: The organisation of teaching in Indian Universities dates back to 1857, when the three universities of Bombay, Madras and Calcutta were established. These universities have devoted attention to the formulation of schemes to promote the spread of economic thought and research. The following account gives a brief appraisal of the work done by such centres of study.

6.61. *Madras*: Forty-seven years back, the Chair of Indian Economics at the University of Madras was founded with Professor Gilbert Slater.[48] His attention was turned towards familiarising himself with the economic and social life of Southern India. He created keen interest among the public in economic problems of research. He visited numerous centres and obtained on the spot knowledge of rural life and its problems, as features of a self-devised orientation programme in view of his foreign upbringing. Economics was developed at Madras on three distinct lines: Fundamental research, applied research and teaching. Statistical ramifications of economic research were recognised as healthy features. Village studies of Professor Slater

48. SLATER, GILBERT: *Stabilizing the Rupee*, (Transactions of the Indian Economic Association, 1920-21).

were pursued subsequently by his successors in office and comparable data were made available for the last four decades. Professor John Matthai, who occupied the Chair between 1922 and 1925 evinced interest in the theory of local self-government[49] and the economics of it. He later flowered into an applied economist and had occupied positions of great responsibility in industry and in government. During the later twenties and upto the early forties economics was in a state of flux in Europe and in England. The feverish urge to gather empirical data and to develop mainly the applied aspects of economics was noticeable in many parts of the world including India. It was during that period that Professors P. J. Thomas[50] and P. S. Lokanathan[51] interested themselves in public finance and industrial problems. K. C. Ramakrishnan specialised in rural economics and co-operation. During the period B. Natarajan[52] wrote on the economic theory of Sir Thomas Munro and also on the theory of land revenue in India. There were also contemporary economists with academic proficiency[53]

49. MATTHAI, JOHN: Evidence before the Indian Economic Enquiry Committee (1925).

50. THOMAS, P. J.: *The Decline of International Trade,* (Indian Journal of Economics, Oct. 1933), India in the World Depression (Economic Journal, London, XLV, 1935). *The Rupee Ratio,* (New Review, IX, 1938). *Research in Economic Science,* (Current Science).

51. LOKANATHAN, P. S.: *Harrod on the Trade Cycle,* (Indian Economic Conference, 1937). *Economic Inequality,* (Dr. C. R. Reddy Commemoration Volume). *The Depression and Development in Economic Theory* (Father Carty Commemoration Volume).

52. NATARAJAN, B.: *Economic Doctrines of Sir Thomas Munro,* (Rev. Fr. P. Carty Commemoration Volume, pp. 371-387, (Fr. Carty 65th birthday Celebration Commiittee, Madras, 1941).

53. KRISHNASWAMY, A.: ***Marshall's Contribution to Indian Economics,*** (Paper submitted to the 25th Conference of the Indian Economic Asso-

who contributed papers on theory. Besides being authors of treatises on applied Indian economic problems, the members of the faculty served on the executive committees of learned associations and on the committees set up by the governments and thus they influenced the current policies by their academic specialisation. True to the training and the spirit of the period during which these economists endeavoured, they held in due course high positions of advisory roles in the Government of India and in the ECAFE of the United Nations. Professor Lokanathan later organised the National Council of Applied Economic Research.

6.611. *Madras: Recent Years*: A spate of post-war reconstruction policies and the eagerness to develop Keynesian economic theory which had suffered a set back during the war years was responsible for the renewed interest in economic theory. During the seventeen years beginning from 1946 to 1962 the output of the department was balanced between theory and application. Professor R. Balakrishna[54] studied pro-

ciation, *Indian Journal of Economics*, pp. 875-897, Vol. 22, April, 1942, Allahabad. Dr. Arcot Krishnaswamy was later associated with the legislative bodies in India and with the specialised agencies of the United Nations.

54. BALAKRISHNA, R.: *Transport Rates and Industrial Distribution*, (Indian Journal of Economics Jan. 1946). *Limitations of the Deductive Theories of Industrial Location* (Indian Journal of Economics, Jan. 1946). *Role of Tariff in Economic Expansion*, Vol. XXVIII, Oct. 1947. *Public Enterprise in a Mixed Economy*, (Indian Journal of Economics, Dec. 1949). *The Concept of Economic Complementarity*, (Madras University Journal, Vol. XX, Jan. 1950. *Nationalisation of Industry*, Tamil Encyclopaedia, Vol. I. *Cultural Reorientations in Economic Development*, (Paper Presented at UNESCO Seminar held in February, 1956). *Process of Economic Growth*, (Madras University Journal, A, Centenary Volume); PODÜVAL, R. N., a member of his staff wrote on: *Budgeting for Full Employment*, (Indian Journal of Economics), Oct. 1948. *National Income Studies*, Recent Developments, (Hindu, 11-11-1950).

blems of regional planning, industrial location, measurement of productivity and allied problems of theory. It was an epoch of judicious mixture of theory and applied economics. The institution of research schemes to pursue the earlier applied economic activities of the department on a widened basis was also taken up. Dr. B.V. Narayanaswamy, my teacher, conducted many surveys on agricultural indebtedness and C. W. B. Zacharias evinced interest mainly in applied economics and were authors of books on "Finances of the Government of India since 1935" and "Madras Agriculture". Besides these major works the faculty members have made contributions pertaining to a few aspects of economic theory mainly of the Keynesian discipline. The subject of methodology in research as an important feature of development was envisaged during this period and in 1955 a Unit for Training in Methods of Applied Social Science Research was organised.

6.62. *Bombay*: Among the centres of higher learning in economics other than Madras, reference can be given to Bombay. In 1919 with a view to train students in research methods in economics, the Bombay University reorganised its course of studies. Its contribution has been both in the direction of pure theory and applied economics, more in the latter category than in the former. During the period of Professor K. T. Shah and Professor C. N. Vakil, and later during that of Professors M. L. Dantwala and D. T. Lakdawala, a spurt in the output of economic literature by this centre was noticeable since 1943, when the Vigibai Jeevanlal Pannalal Trust provided for strengthening the personnel and the development of an Agricultural

Economics section in 1945. Subsequently the government provided finance for new surveys of applied economic character. Bombay, the capital market of India, has potentialities to attract attention to economic research at the theoretical level and to draw the personnel of a varied background and training. The practitioners of the art of economics have been numerous in the business houses of the city and in the editorial offices of serious minded journals.

6.63. *Calcutta*: The University of Calcutta which was established in 1857 did not have upto 1907, political economy as a separate subject of study. Upto 1882 history honours graduates had one paper in political economy and thereafter even B.A. pass course students had to do Economics.[55] From 1907 onwards Economics was studied as a separate subject at the graduate and post-graduate levels, but even then politics and public administration upto 1930 and constitutions upto 1948 were prescribed as separate subjects to be taken compulsorily by the candidates. The Calcutta tradition enabled the young aspirants to obtain a broad-based foundation for the study of economics. The Calcutta University has had many who were devoted to the study of economic theory and the importance which Calcutta attached to statistics and speculative philosophical studies were responsible for the emphasis on theory on the one hand and empirical study on the other. Research in econometric theory and statistical theory pertaining to economics was fostered in the In-

55. VAKIL, C. N.: The University Teaching of Social Sciences, *Teaching of Economics in India*, pp. 114-133. (UNESCO), Paris, 1954.

dian Statistical Institute. Professor P. C. Mahalanobis was responsible for shaping this centre of learning into its present status.

6.64. *Poona*: The Gokhale Institute of Politics and Economics is a class by itself in view of the crusading zeal of the parent body, the Servants of India Society. Rao Bahadur R. R. Kale of Satara gave a donation of one lakh of rupees and with that the Gokhale Institute was founded in 1930. In the recent decades of its activity under the stewardship of Professor D. R. Gadgil, the Institute had undertaken in the early stages many writings on economic theory and had attempted to build a strong centre of Indian economic thought. In the last decade which was characteristic of liberal governmental and international finance for applied economic research, this Institute also had taken up activities like the collection of data for the National Sample Survey and applied research on behalf of the Institute of Pacific Relations and similar international foundations. The justice which this institute had done to the analysis of regional problems has had as its by product the provision of intellectual climate for fundamental thinking.

6.65. *Delhi*: The Delhi School of Economics established in 1949 under the auspices of the University of Delhi has built up in a brief span of time considerable potential for organising theoretical research. Guided by Director V. K. R. V. Rao, this school had become the centre for the study of contemporary problems of Indian economic administration. Besides teaching; this school had a proliferation of efforts to

probe into the economy of the country. Its proximity to the offices of the Union Government and the essentially controversial, though provoking scholarly attitude of its Director Rao accounted for the course of its history, till Professor B. N. Ganguli took over as Director. A new Institute of Economic Growth falling in line with the mode of modern micro approach research has been started with Professor V. K. R. V. Rao as its Director. There has been development of research in the theories pertaining to National Income, Trade and Money.

7.0. Outlook for University Education

7.1. *The Outlook for Theoretical Studies in India:* In a study of these issues Professor Vakil after considerable association with the conduct of applied economic research in India observed, that the students of economic theory (in India) tended to be discouraged and those students who were pursuing problems of pure theory had to work in an uncongenial atmosphere. He made this observation after carefully prefacing it with the following statement pertaining to recent tradition: "A healthy trend in the study of economics in Indian Universities is the attention now paid to the need for imparting sound instruction in economic theory."[56]

This brief appraisal of the function of a few Indian Universities and other centres in the promotion of knowledge suggests the basis for research in theory and in applied economics. With the expanding scope for ap-

56. Vakil, C. N.: *Teaching of Social Sciences in India*, (UNESCO, Paris, 1956), Ch. II, Teaching of Economics, pp. 36-64.

plied economics in government and in industry the future of university research may have to be more and more conditioned by theoretical pursuits. For, in the ultimate analysis, it is the relevance and variety of theories that are available to the society for immediate application that would pay high dividends. Application is a matter of both emergency and policy making. Theoretical research is time consuming and exacting in its demand on intellect and perseverence. It rules out immediacy of gain and has to be undertaken for its own sake. The role of Universities is that of toolmaking and tool-using is that of other spheres of society.

7.2. *Excess Demand on Slender Economic Theory*: The phenomenal demands made on the services of economists in industry, government and law making is partly attributable to the sense of security which policy makers experience in commissioning an economist to a task. Where he has been a success, whether in the Keynesian garb or in the Ricardian sense or in the role of economic administrator like Galbraith, these men have often thrown away their shrinking garbs and wore the apron which hindered them least in the preception of new laws of society.

7.3. *The Familiar Theories of Economics have been Overworked and are Obsolete*: Apart from the need for theory as the larger basis of action, the overanxious applied economist whose interest in and requirements of principles are legion demand a flow of theoretical literature which would keep the applied economists not only busy but also highly productive. The entry of statistics and econometrics as related

disciplines has increased the demand for theoretical work. Marshall who was by training a mathematical physicist and Keynes who was also a mathematician by training soon turned to the study of wider spheres of knowledge. The question whether statistics, econometrics and mathematics are essential for an economist is far too elementary to stand further discussion. The need for these subjects in developing economics is unquestionable. Measurement of phenomena, the limitation of the capacity of the individuals to observe and the capacity to build micro or macro universes of behaviour have all become feasible because of the cross fertilisation of knowledge arising out of these disciplines. But that economists have to identify new areas of theoretical research is still an idea for which support has to be canvassed. "We may stand aside from those who are applying the theories of economics, so as to take a view of the general shape of our science."[57] It is possible especially because, of the many social sciences, economics does not suffer from public apathy;[58] It enjoys a high degree of patronage and liberal financial support.

7.4. *Exclusive Importance to Applied Economics:* The preoccupation of the economists has been in respect of applied economics. The verification of the hypothesis is an inevitable feature of empirical research. The setting of a hypothesis which precedes this research is conditioned by the limited theoretical knowledge on

57. DASGUPTA, A. K.: *Op.Cit.*, (Indian Economic Journal, Vol. VIII, No. 3, 1961), p. 195.
58. DASGUPTA, A. K.: *Ibid.*, p. 80.

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which empirical research is designed. In the Indian Economy the degree of monetisation is of a small order. The desire to maximise money income has its rival in the desire for inter-class supremacy. Besides, the incentives for higher levels of work are not money reward or real wage-goods reward but individual excellence or class prestige. These are features which have a prominent place in a system of incentives. The existing system of taxation views to some extent the society to be made up of biological individuals, who cannot be trusted to behave in the social interest or in the ultimate personal interest necessary by extended family units. But the policies of education, employment and governmental manpower budgeting appear to be based upon individualistic notions of each to himself. The West European society is based upon individualism. The oriental societies have for long considered themselves as societies made of classes. Economic policies pursued with a view to maximise the output of goods and services on the basis of an individualistic society are not necessarily policies that would work except under self-adjusting forces in a society of classes. Besides, the agricultural communities bear a high degree of conservatism. In a modern economic society the aims are such as to encourage higher standards of living, increasing level of industrialisation and higher degree of urbanisation. These are no doubt features which have characterised the economic growth of West European Societies.

7.41. *Indian and Japanese Economic Thought:* In earlier decades there was a paucity of studies based on observation and measurement of Indian economic

phenomena. The position was rectified during the last few decades by a feature which Max Millikan,[59] who studied this issue, has come to realise as a spurt in the release of studies pertaining to measurement and observation, the "survey happy" attitude of Indian economists and their absorption of interest in current economic development. There are many sparkling observations of broad sweep by Max Millikan though his paper bristles with many inevitable partial assessments and omissions. Commenting upon the development of Japanese economic thought Bronfenbrenner[60] stated that its three besetting ailments were sectarianism, inbreeding and schizophrenia. His diagnosis in respect of the first two conditions appears to be a piece of ingenuity. The developments in economic thought in all schools, from the most ancient namely the Hindu, Chinese, Greek, Roman, Anglo Saxon and Japanese to the new fangled American, have all been conditioned by an irreducible minimum inbreeding and sectarianism. A sect is a sociological grouping conducive to the conservation of the ideas of the past and fertile for the generation of thoughts of the future. Apart from the changes of charges of sectarianism and inbreeding,

59. MILLIKAN, MAX: *Economic Thought and its application and Methodology in India,* (Papers and Proceedings of the Sixty Eighth Annual Meeting of the American Economic Association, New York, Dec. 28-30, 1955; American Economic Review, Vol. XLVI, May, 1956, No. 2, pp. 399-407).

60. BRONFENBRENNER, MARTIN: *Economic Thought and its application and Methodology in the East,* (Papers and proceedings of the Sixty Eighth Annual meeting of the American Economic Association, New York, Dec. 28-30, 1955: American Economic Review, Vol. XLVI, May, 1956, No. 2, pp. 389-398).

schizophrenia is an ailment of many types and common to Indian and Japanese economic thought. It refers to the separation of on-campus thinking from the off-campus thinking. The spread of infection to on-campus thought from off-campus events may be due to non-acclamatization to off-campus commercial or administrative details and practices. As a result there is very limited exchange of personnel between these two spheres. If these conditions are not changed, any combat between the oscillating panthom of public opinion and the measured-cum-cautious movement of the pure theory can seldom be contemplated except out of sadistic pleasure.

7.5. *Scope for Theoretical Study in India*: Unlike the nineteenth century economists, those of the twentieth century are in a position to develop the thought as professional theoretical economists. They do not wholly depend on men straying into the realms of economic theory as it happened in the past. The subject has occupied, though recently, an important place[61] in all centres of higher learning, and the scientific methods of study have yielded results that are being tested. Before the Indian economists there is a vast vista for the development of economic theory.

61. Robbins, Lionel: *The Economist in the Twentieth Century*, (Macmillan, London, 1954), p. 2.

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